# REPORT
OF THE
# SUGAR ENQUIRY COMMISSION

October, 1965

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MINISTRY OF FOOD AND AGRICULTURE
GOVERNMENT OF INDIA

# REPORT
## OF THE
# SUGAR ENQUIRY COMMISSION

October, 1965

D.O. No. C/SEC/200/65

SUGAR ENQUIRY COMMISSION

Ministry of Food & Agriculture
Government of India

*New Delhi, October* 21, 1965.

Dear Shri Dias,

The Report of the Sugar Enquiry Commission, appointed under Government of India Notification No. S.O. 2670 dated August 3, 1964, is submitted herewith

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Yours sincerely,

(Sd.) S. R. SEN,

*Chairman.*

Shri A. L. Dias,

Secretary to the Government of India.

Ministry of Food and Agriculture,
(Department of Food)

New Delhi.

# CONTENTS

PAGE

CHAPTER I. Introduction . . . . . . . . . 1

## PART I. HISTORICAL BACKGROUND

CHAPTER II. Trends in Production . . . . . . . 9
CHAPTER III. Sugar Policy—A Retrospect . . . . . . 21

## PART II. PROBLEMS OF DEVELOPMENT

CHAPTER IV. Economics of Growing Sugarcane . . . . . 39
CHAPTER V. Gur and Khandsari . . . . . . . . . 47
CHAPTER VI. Utilisation of By-products . . . . . . 54
CHAPTER VII. Research and Development . . . . . . . 59

## PART III. PRICE AND DISTRIBUTION POLICY

CHAPTER VIII. Perspective for 1975-76 . . . . . . . 69
CHAPTER IX. Price Policy for Sugar and Sugarcane . . . . . 74
CHAPTER X. Cost Schedules . . . . . . . . 100
CHAPTER XI. Export Policy . . . . . . . . 128

## PART IV. LICENSING POLICY

CHAPTER XII. Licensing Policy . . . . . . . . 137
CHAPTER XIII. Rehabilitation and Modernisation . . . . . 150

## PART V. CONCLUSIONS AND RECOMMENDATIONS

CHAPTER XIV. Conclusion . . . . . . . . . 159
Annexure . . . . . . . . . 171
Summary of Recommendations . . . . . . . . . . 175

APPENDICES . . . . . . . . . 200
STATISTICAL TABLES . . . . . . . . . 229

## CHAPTER I

# INTRODUCTION

### 1. *Constitution*

1.1. In exercise of the powers conferred by Section 3 of the Commissions of Inquiry Act, 1952 (60 of 1952), the Government of India appointed the Sugar Enquiry Commission by Notification No. S.O. 2670 dated August 3, 1964 (Appendix I). The Commission was constituted as follows:

| | |
|---|---|
| Dr. S. R. Sen,<br>Adviser (Programme Administration) and<br>Additional Secretary to the Government of India,<br>Planning Commission,<br>New Delhi. | *Chairman* |
| Shri S. C. Chaudhri,<br>Member-Secretary, Agricultural Prices Commission<br>and Economic & Statistical Adviser,<br>Ministry of Food and Agriculture,<br>New Delhi. | *Member* |
| Shri N. Krishnan,<br>Chief Cost Accounts Officer,<br>Ministry of Finance,<br>New Delhi. | *Member* |
| Shri S. C. Gupta,<br>Director,<br>National Sugar Institute,<br>Ministry of Food and Agriculture,<br>Kanpur. | *Member* |
| Dr. Dharm Narain,<br>Institute of Economic Growth,<br>University of Delhi,<br>Delhi. | *Member* |
| Dr. P. K. Mukherjee,<br>Additional Economic & Statistical Adviser,<br>Directorate of Economics & Statistics,<br>Ministry of Food and Agriculture,<br>New Delhi. | *Secretary* |

### 2. *Terms of Reference*

2.1. The Commission was asked to enquire into:

(a) the determination of the price, and the system of distribution of sugar; and

(b) the policy regarding licensing of new sugar factories and the expansion of existing sugar factories.

2.2. The Commission was asked to submit an interim report regarding the determination of the price of sugar by September 10, 1964.

2.3. Subsequently, the Government of India also referred the question of exports of sugar to the Commission and asked for its recommendations on the following issues:

(i) Desirability of sugar industry bearing a portion of the loss on exports, what this portion should be and how the same should be recovered from sugar factories. Would the Commission suggest enactment of a new legislation for the purpose and, if so, on what lines?

(ii) Desirability of recouping a portion of the loss from the consumer, what this portion should be and the manner in which it should be collected, *e.g.*, special levy or through a system of marketing in which the portion of loss to be recouped is added on to the consumer price.

(iii) In case the export loss is to be recovered from the consumer through a marketing system, whether the work of internal distribution and exports should be entrusted to the Food Corporation or a separate Corporation should be set up for this purpose.

(iv) Economy in the manufacture of raw sugar with reference to the actual cost of production.

(v) Remission of purchase tax by State Governments on sugarcane used for manufacture of sugar exported and the method of securing the same.

2.4. The Commission was further asked to examine the question of production of A and B grades of sugar and whether it cost more to produce sugar of A and B grain sizes and, if so, to what extent?

2.5. The Government of India also referred the Report of the Committee on Rehabilitation and Modernisation of Sugar Factories in India, 1965 (under the chairmanship of S. N. Gundu Rao), to the Commission on August 27, 1965, for its comments.

2.6. The Commission started its work on August 4, 1964 and submitted the interim report to the Government of India on September 9, 1964.

### 3. *Previous Enquiries*

3.1. The Government of India had set up, from time to time, various bodies to enquire into the problems of the sugar industry. The terms of reference of these bodies related to different aspects of the industry. For the first time, the problems of the sugar industry were examined by the Tariff Board in 1931, when Government referred to it the case for granting protection to the industry. In March, 1937, the Tariff Board was asked to enquire into the quantum of protection to be given to the sugar industry during the period April 1, 1938 to March 31, 1946. The tariff enquiry proposed to be held in 1940 was postponed because of the outbreak of World War II. In January, 1947, the Tariff Board was requested to make a summary investigation into the claim of the sugar industry for further protection. Further enquiry was conducted in 1948, as a result of which the Tariff Board recommended, *inter alia,* the continuance of the then existing protection for a further period of two years ending March 31, 1951. In July, 1949, the Government of India asked the Tariff Board to conduct a fuller enquiry into the sugar industry's claim for protection after March 31, 1950. Before the protection granted to the sugar industry was withdrawn, the Government of India appointed, in July, 1949, a Technical Sugarcane Committee (under the chairmanship of T. Vijayaraghavacharya) to enquire into the cost of production of sugarcane, to review the progress of cane research and development and to suggest ways and means for achieving quicker results in increasing the yield of sugarcane per acre and the sugar content of cane with a view, ultimately, to reducing the cost of sugar. In 1950, a Sugar Enquiry Committee (Ganga Nath Committee) was appointed by the Government of India to enquire into such aspects of the sugar crisis of 1949 as were not fully covered by the Tariff Board enquiry of 1949.

3.2. As early as 1937, a schedule of sugar prices was drawn up by the then Director (R. C. Srivastava) of the Imperial Institute of Sugar Technology (now the National Sugar Institute) with a view to determining the fair price for sugarcane. An Expert Committee (under the chairmanship of B. V. Narayanaswamy Naidu) was appointed in 1951 to prepare schedules for determining the cost of manufacture of sugar: (i) on an all-India basis; and (ii) for important regions. The schedules suggested by this Committee were later examined by another Expert Committee (under the chairmanship of P. A. Gopalakrishnan) in 1955, which suggested certain amendments and recommended that the amended all-India schedule might be used until such time as regional schedules were ready.

3.3. The Government of India asked the Tariff Commission in 1958 to examine the cost structure of sugar and fair price payable to the sugar industry. In 1958, it also appointed a Fact Finding Committee on Khandsari Sugar to ascertain the position of khandsari sugar *vis-a-vis* the sugar industry, the extent of diversion of cane to khandsari in factory zones and to suggest measures necessary to meet the situation. In October, 1960, it asked the Tariff Commission to go into the question of revision of the price linking formula for sharing sugar price between sugar factories and cane growers. In June, 1963, the Government of India appointed a Committee on Rehabilitation and Modernisation of Sugar Factories in India (under the chairmanship of S. N. Gundu Rao) to examine the problems of the old and uneconomic units in the sugar industry. Some of the State Governments had also set up a number of Committees to enquire into the various problems of the sugar industry. The Government of India appointed the Sugar Enquiry Commission in August, 1964, the terms of reference of which covered, for the first time. all the important aspects of the sugar industry.

## 4. *Method of Enquiry*

4.1. The Commission addressed letters to the State Governments, Union Territories, associations of sugarcane growers, gur and khandsari manufacturers and traders, sugar mills and sugar merchants, chambers of commerce, co-operative organisations and other interests concerned with sugarcane, sugar, gur and khandsari requesting them to furnish their views on its terms of reference. Views were also invited from the Ministries and Departments concerned of the Government of India. Besides, the Commission issued a Press Note inviting the views of all persons and organisations interested in its terms of reference.

4.2. The Commission had meetings with officers of the concerned Ministries of the Government of India, of State Governments and Union

Territories. It took evidence from important all-India and regional associations of sugar factories, *e.g.*, Indian Sugar Mills Association, South Indian Sugar Mills Association, Deccan Sugar Factories Association, National Federation of Co-operative Sugar Factories and Joint East U.P. and Bihar Sugar Factories Committee. The Commission also met representatives of important chambers of commerce, *e.g.*, Federation of Indian Chambers of Commerce and Industry. Representatives of cane growers, sugar merchants, gur and khandsari manufacturers, confectionery and biscuit manufacturers, food preservers, distilleries and sugar technologists also gave evidence before the Commission. The Commission took evidence from representatives of the Khadi and Village Industries Commission, experts of the National Productivity Council and Chairman, Committee on Rehabilitation and Modernisation of Sugar Factories. A list of the various State Governments, Union Territories, associations and individuals invited by the Commission to tender evidence is given in Appendix II.

4.3. In the interim report, the Commission took a view on price fixation for 1964-65 on the basis of information then available, pending fuller enquiry into the capital and cost structure of the sugar industry. Soon after the submission of the interim report, the Commission forwarded, on September 22, 1964, a set of proformae to all the working sugar factories (Appendix III) requesting them to furnish the requisite information, duly certified by their auditors, by October 31, 1964.

4.4. Subsequently, the Commission drew up a sample of sugar factories for the survey of the cost structure of the industry, keeping in view all the factors and characteristics which deserved consideration in the selection. Views were solicited from Indian Sugar Mills Association and National Federation of Cooperative Sugar Factories on the representative character of the sample drawn up by the Commission and modifications, wherever necessary, were made therein. While most of the sample factories cooperated in furnishing the requisite information, some of them did not do so.

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4.5. Officers of the Cost Accounts Branch of the Ministry of Finance were entrusted with the task of conducting on-the-spot investigations into the cost structure of the sample sugar factories on the basis of the data furnished by them in the proformae forwarded to them earlier by the Commission. The investigating officers visited the selected sugar factories from January to June, 1965. The sugar factories concerned were given a hearing in regard to the findings of the investigating officers.

4.6. The Commission also requested, on November 28, 1964 (Appendix IV), the State Governments and Union Territories to furnish data, including those on cost of cultivation, for sugarcane and other competing crops in the area currently under sugarcane as well as that having a potential for sugarcane cultivation. These data were needed for taking a view on the economics of sugarcane cultivation *vis-a-vis* competing crops and the potentiality for the development of the sugar industry.

4.7. The Commission also conducted a study of productivity in the sugar industry with the technical help of the Institute of Economic Growth of the University of Delhi. With the help of the field staff of the Institute as well as of the Directorate of Economics and Statistics, Ministry of Food and Agriculture, the Commission conducted a quick survey for ascertaining the reactions of the different parties at various stages—from the sugarcane producers to the sugar factories and from the sugar factories to the consumers—to Government policies with regard to the distribution of sugar.

4.8. The Commission undertook visits to important sugarcane-growing states with a view to carrying out on-the-spot study of sugarcane cultivation and working of sugar factories and to acquaint itself with the problems of sugarcane growers and sugar industry in the different regions of the country. During these visits, the Commission met the officers of the State Governments concerned, went round a few selected sugar factories, met their managerial and technical personnel, visited sugarcane farms and met some sugarcane growers. The Commission acquainted itself with problems of both joint-stock and co-operative sugar factories in the various states. It visited some sugarcane research stations and their farms, had discussions with their experts on research and development aspects of sugarcane and elicited views on steps which should be taken to improve the quality of sugarcane. In particular, the Commission visited the Sugarcane Breeding Institute, Coimbatore and National Sugar Institute, Kanpur. Appendix V gives details of the visits of the Commission to the various parts of the country.

4.9. Before finalising its main report, the Commission invited certain senior officers of the Government of India and representatives of some of the associations to give further evidence on issues which the Commission needed to clarify. It also obtained from the Ministry of Food and Agriculture various reports, proceedings and notes and other information bearing on its terms of reference.

### 5. *Plan of the Report*

5.1. This Report consists of five parts divided into fourteen chapters, besides statistical and other appendices. Part I gives the historical background and other information relating to problems and development of the sugar industry. Part II puts together the information relevant to its terms of reference which helped the Commission in its enquiry. Part III deals with the perspective for demand and supply, the policy regarding the determination of price, system of distribution and exports of sugar. Part IV deals with the policy regarding licensing of new sugar factories and the expansion of existing sugar factories, rehabilitation and modernisation. Part V of the Report summarises the main conclusions.

5.2. As pointed out earlier, the Commission had asked the sugar factories to submit duly completed cost returns by October 31, 1964. The Commission had to extend the date for their submission four times and the sugar factories were finally asked to furnish the returns by February 15, 1965. Even then, 51 sugar factories sent their returns long after that date. The list of sugar factories asked to submit cost returns is given in Appendix VI. As mentioned earlier, the Commission requested State Governments and Union Territories to furnish information regarding cost of cultivation of sugarcane and competing crops in the prescribed proforma. While some State Governments did furnish the information, a few after a long delay, the others did not furnish any information at all. Although the Commission had requested the Government of India for staff soon after the submission of its interim report, the staff required by it was in position only from the middle of March, 1965.

## 6. *Acknowledgements*

6.1. The Commission would like to take this opportunity to express its thanks to the representatives of the Ministries and Departments of the Government of India and of State Governments, Union Territories concerned and several organisations and associations concerned with the problems of sugarcane, sugar, gur and khandsari and the experts who responded to its invitation and tendered valuable evidence on problems facing the sugar economy of the country. The Commission is grateful to the Institute of Economic Growth, Delhi, National Sugar Institute, Kanpur, Sugarcane Breeding Institute, Coimbatore, Cost Accounts Branch of the Ministry of Finance, Planning Commission, Department of Food, Directorate of Sugar and Vanaspati and Directorate of Economics and Statistics who rendered to it all the assistance needed.

6.2. The Commission was greatly helped in its work by the technical notes prepared by its Secretary, Dr. P. K. Mukherjee. The research work as also the secretariat work of the Commission was organised by him in a most competent manner. The Commission would also like to record its appreciation of the assistance rendered by Shri U. R. Padmanabhan, Cost Accounts Officer, Ministry of Finance. His technical knowledge and organising ability were of great help to the Commission in the preparation of the cost schedules in particular. The technical and other assistance given by Shri N. M. Bhargava, Officer on Special Duty to the Commission deserve special mention. The Commission would also like to acknowledge the hard work put in by its staff under the competent supervision of Shri A. P. Chakravarti, Research Officer.

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## PART I

# HISTORICAL BACKGROUND

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## CHAPTER II

## TRENDS IN PRODUCTION

The sugar industry occupies an important place in the economy of the country. It provides employment to a lakh and a quarter persons in the industrial sector. A special feature of the industry is its close connection with agriculture: it is an important source of livelihood for a considerable section of the agricultural population. For some 20 million cultivators or more, scattered in different parts of the country, sugarcane is one of the principal crops for meeting their cash requirements. Moreover sugarcane, being a hardy crop, able to stand well the vagaries of nature, provides a much needed security to the farmer and occupies an important position in the cropping pattern in several tracts.

### 2. *Trends in Sugarcane Acreage*

2.1. Sugarcane growing areas in the country may be broadly divided into two typical belts: the sub-tropical and the tropical. The sub-tropical belt mainly comprises the states of Punjab, Rajasthan, Uttar Pradesh, Bihar, Madhya Pradesh, Orissa, Assam, and West Bengal. The tropical belt covers the states of Maharashtra, Gujarat, Andhra Pradesh, Madras, Mysore and Kerala. The two belts are characterised by marked differences in climatic and agricultural conditions. In the sub-tropical belt, sugarcane is generally planted in February-March and harvested in November-April. In the areas where sugarcane is grown there are three type of seasons, the hot and dry, the hot and moist and the cold and dry. The season most favourable to the growth of sugarcane crop in the belt is restricted to a brief period of about 3 to 4 months, from July to October. Moreover, in most parts of the sub-tropical belt, facilities for irrigation are generally inadequate and the sugarcane crop survives the dry spell largely due to sub-soil moisture. Although in the tropical belt the climatic variations are not so wide, the sugarcane crop has to be grown under well-assured irrigation. The crop is generally sown in January-May and harvested in November-April. Apart from factors like irrigation and fertilizer use, climatic and soil differences between sub-tropical and tropical belts have their effect on the average out-turn of cane per acre as also on its quality. The yield per acre in the sub-tropical belt is about half of that in the tropical belt, and the sucrose content of the sub-tropical cane is, on an average, lower than that of the tropical cane. More than three-fourths of the area under sugarcane in the country has always been in the sub-tropical belt.

2.2. The area under sugarcane is generally regulated by the cultivator keeping mainly in view its importance as a cash crop and relative profitability of its cultivation compared with that of competing crops, important amongst which are paddy, wheat and cotton. Besides, sugarcane is raised as a 'security crop' and this also influences the area under it. Over the past decade and a half, the area under sugarcane (Chart 1) in the country has registered a substantial increase. This has been due to various factors, such as, increased facilities for irrigation, greater availability of fertilizers and improved seeds, substantial increase in the demand for sugar and gur and attractive prices of sugarcane. Though the trend in acreage and production of sugarcane has been upward, there have been individual years in which they have suffered sharp declines.

2.3. The following table brings out the changes in the area under sugarcane from 1950-51 to 1963-64:

TABLE II.1—*Trends in Area under Sugarcane*

| year | index of area (Base : 1949-50 =100) | percentage change (+) or (—) over preceding year |
|---|---|---|
| (1) | (2) | (3) |
| 1950-51 . . . . . . . | 116 | .. |
| *First Plan* | | |
| 1951-52 . . . . . . . | 132 | (+) 14 |
| 1952-53 . . . . . . . | 118 | (—) 10 |
| 1953-54 . . . . . | 96 | (—) 15 |
| 1954-55 . . . . . . . | 110 | (+) 14 |
| 1955-56 . . . . . . . | 125 | (+) 14 |
| *Second Plan* | | |
| 1956-57 . . . . . . . | 139 | (+) 12 |
| 1957-58 . . . . . . . | 140 | (+) 1 |
| 1958-59 . . . . . . . | 132 | (—) 6 |
| 1959-60 . . . . . . . | 145 | (+) 10 |
| 1960-61 . . . . . . | 164 | (+) 13 |
| *Third Plan* | | |
| 1961-62 . . . . . . . | 166 | (+) 1 |
| 1962-63 . . . . . . . | 155 | (—) 7 |
| 1963-64 . . . . . . . | 153 | (—) 1 |
| 1964-65 . . . . . . . | 172 | (+) 12 |

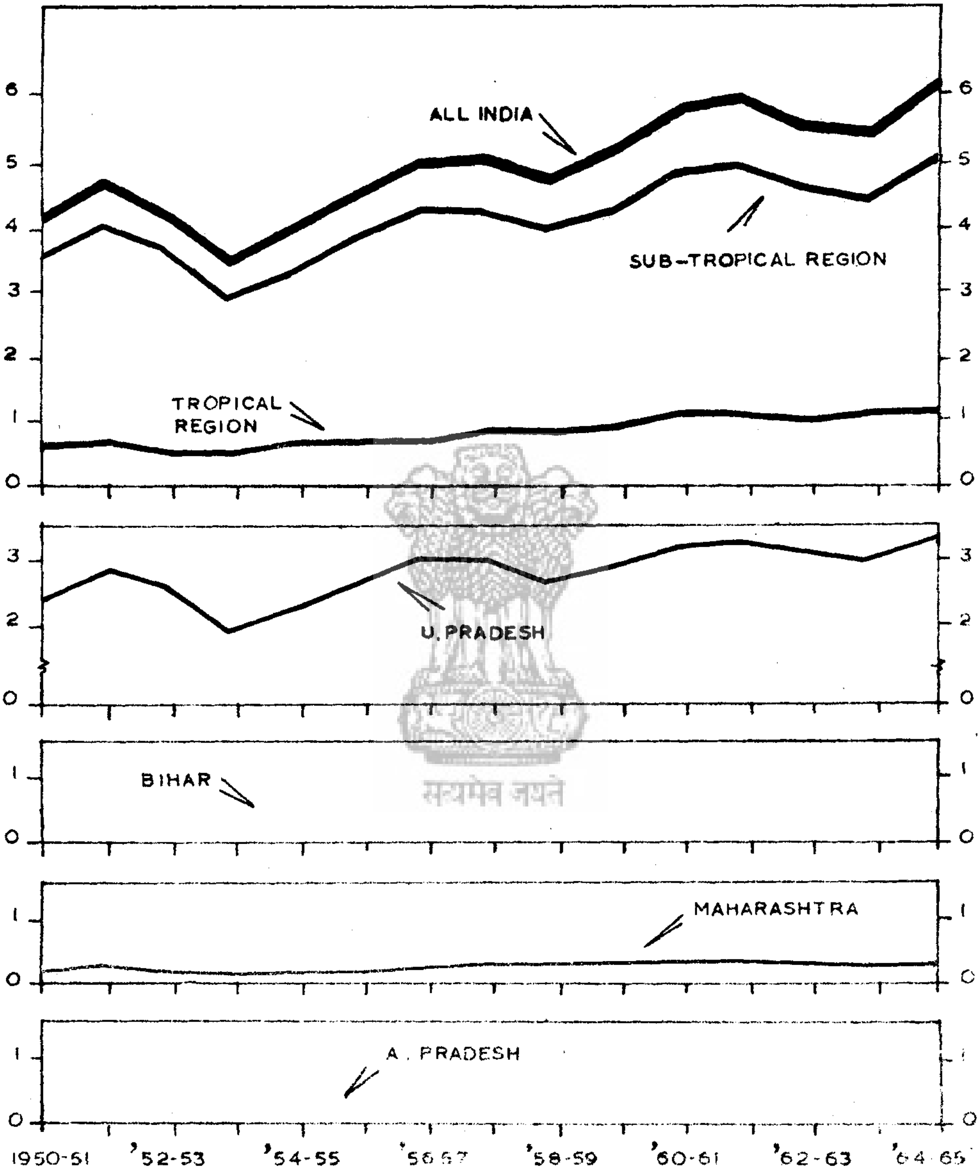
The area under sugarcane did not show any upward trend during the First Five Year Plan period while the year-to-year fluctuations were rather violent. Since the beginning of the Second Plan period, however, the trend has been upward and the fluctuations, on the whole, more moderate.

2.4. The rate of increase in area under sugarcane has been higher than that for the competing crops, *viz.*, rice, wheat and cotton. During the decade 1952-53 to 1961-62, the index of area under all crops registered a linear growth rate of 1·31 per cent per annum. Over the same period, the index of area under sugarcane showed a growth rate of 6·16 per cent. The

*CHART I*

# AREA UNDER SUGARCANE

**MILLION ACRES**



corresponding rates of growth for rice, wheat and cotton were 1·49, 3·07 and 0·72 respectively. There was thus a relative shift of area in favour of sugarcane. The sub-tropical belt showed a relatively lower growth rate for area under sugarcane than the tropical belt.

2.5. The following table shows the changes in the production of sugarcane during the period 1950-51 to 1963-64:

TABLE II.2—*Trends in Production of Sugarcane*

| year | index of production (base : 1949-50 =100) | percentage change (+) or (—) over the preceding year |
|---|---|---|
| (1) | (2) | (3) |
| 1950-51 | 114 | .. .. |
| *First Plan* | | |
| 1951-52 | 123 | (+) 3 |
| 1952-53 | 102 | (—) 17 |
| 1953-54 | 90 | (—) 12 |
| 1954-55 | 116 | (+) 29 |
| 1955-56 | 120 | (+) 4 |
| *Second Plan* | | |
| 1956-57 | 137 | (+) 14 |
| 1957-58 | 138 | (+) 1 |
| 1958-59 | 142 | (+) 3 |
| 1959-60 | 153 | (+) 7 |
| 1960-61 | 184 | (+) 20 |
| *Third Plan* | | |
| 1961-62 | 174 | (—) 6 |
| 1962-63 | 157 | (—) 9 |
| 1963-64 | 174 | (+) 11 |
| 1964-65 | 202 | (+) 16 |

Like area, the production of sugarcane (Chart II), after fluctuating widely during the First Plan period, registered an upward trend during the Second and Third Plan periods.

2.6. The production of sugarcane increased much more than that of any other crop. The all-India linear rate of growth of production of all crops during the decade ending 1961-62 was 3·23 per cent per annum. The growth rate for all foodgrains was 2·66 while that for non-foodgrains 4·40. The growth rate for sugarcane was substantially higher at 8·56. Over the period, the growth rate varied considerably from state to state. The sub-tropical belt recorded a lower rate of growth than the tropical belt.

2.7. In general, the amplitude of fluctuations of area as well as production was less in the tropical belt than the sub-tropical belt. Of all the states, Maharashtra achieved comparatively stable rates of growth in area and production and Bihar was the most unstable in its performance.

2.8. The share of the states in the tropical belt both in area and production has increased gradually. Maharashtra in the tropical belt achieved a significant increase and Uttar Pradesh and Bihar a gradual decline.

2.9. The yield per acre of sugarcane, taking the country as a whole, has not shown any marked improvement. It has, on the other hand, fluctuated rather violently. While the area under sugarcane increased under the First Plan, the yield per acre actually declined. During the Second Plan period, the yield per acre increased but the extent of its rise was relatively less than the increase in area under the crop. The increase in sugarcane production has been achieved largely as a result of expansion in area. Not only sharp fluctuations in the yield per acre need to be minimised but there is also considerable scope for improvement in its level. The all-India linear rate of growth in yield per acre of 1·66 per cent per annum for sugarcane, during the decade ended 1961-62, was slightly lower than the rate of 1·76 per cent for all crops although it was higher than the growth rates of 1·63 per cent for rice, 1·02 per cent for cotton and 0·94 per cent for wheat. It may also be pointed out that the yield per acre (Chart III) in fact declined in some of the sub-tropical states, such as Uttar Pradesh and Bihar.

2.10. During the triennium ending 1963-64, for which period comparable data for different states are available, the average yield per acre of sugarcane for the country as a whole was of the order of 17·6 tonnes. Over the same period, the yield per acre of sugarcane in Uttar Pradesh averaged 15 tonnes, in Bihar 13 tonnes and in Punjab 14 tonnes. Thus, the three main sugarcane growing states in the sub-tropical belt had an yield per acre lower than the average for the country. The yield per acre in Maharashtra was 32 tonnes. Madras and Andhra Pradesh each recorded an yield of 31 tonnes. Thus, the yield per acre of sugarcane in the tropical belt was more than double of that in the sub-tropical belt.

2.11. Apart from agro-climatic factors, the availability and adequacy of water influences the yield per acre of sugarcane considerably. During the triennium ended 1961-62, only 69 per cent of the total area under sugarcane in the country was irrigated. In Bihar, the proportion of irrigated area to the total area under sugarcane was the lowest, being only 27 per cent. Corresponding proportion for Uttar Pradesh was higher at 65 per cent and for Punjab at 75 per cent. On the other hand, almost 100 per cent of the sugarcane area in the tropical belt received irrigation.

### 3. *Utilisation of Sugarcane*

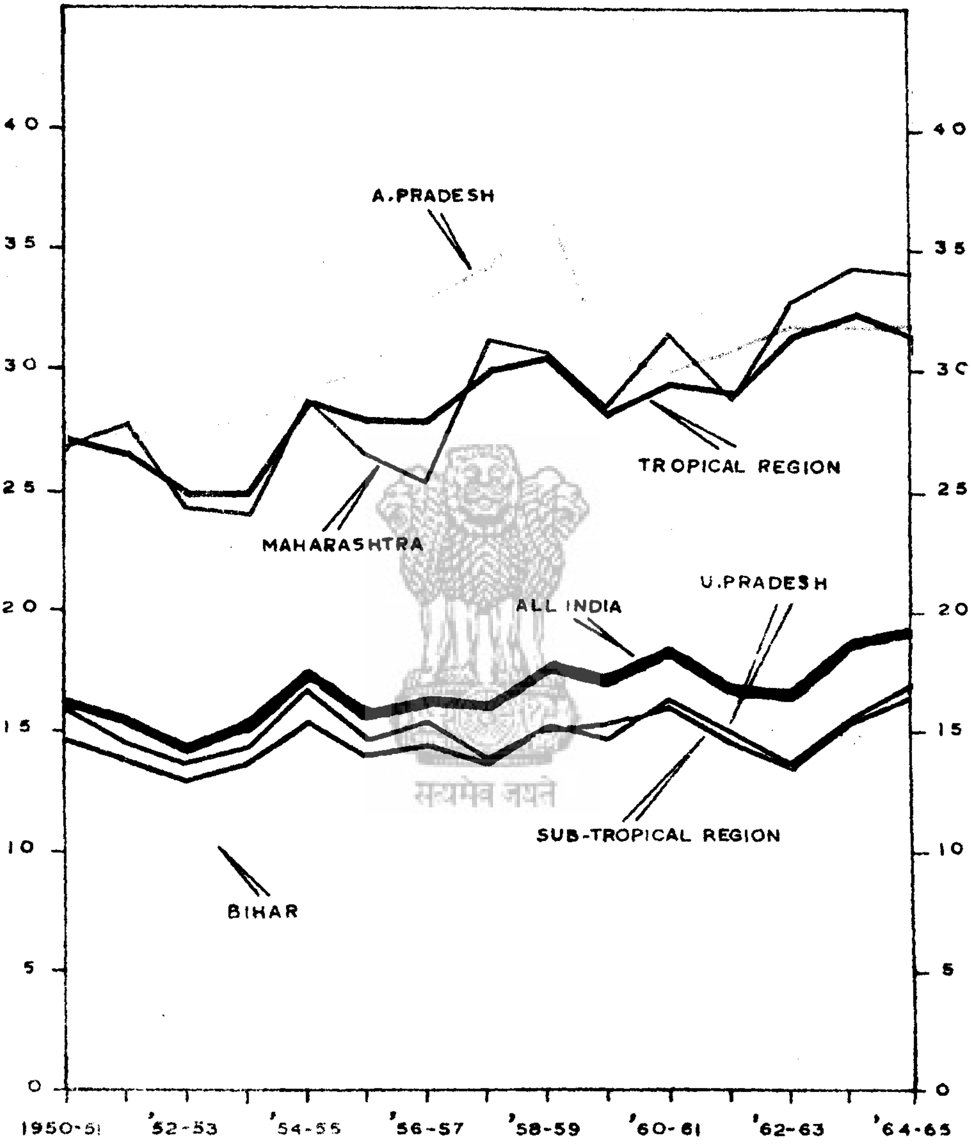
3.1. Sugarcane is utilised for planting, chewing and juice-drinking and for manufacture of sugar, gur and khandsari. Among the different purposes for which sugarcane is utilised, reliable data are available only for

CHART III

# YIELD PER ACRE OF SUGARCANE

IN TERMS OF CANE

IN TONNES



cane crushed by vacuum pan factories for manufacture of sugar. The Directorate of Marketing and Inspection of the Ministry of Food and Agriculture, however, have conducted surveys on marketing of sugarcane in the country as a result of which some estimates are available regarding the utilisation of sugarcane for planting, chewing and juice-drinking. After making allowance for the utilisation for these purposes and for manufacture of sugar, the balance of the sugarcane produced is reckoned as being available for the production of gur and khandsari, the bulk of it going to the former. While the overall output of sugarcane has a bearing on the utilisation of sugarcane for the manufacture of sugar, it is the demand for sugarcane for gur-making and khandsari manufacture that also influences considerably the availability of sugarcane to vacuum pan factories.

3.2. Table II.3 shows the recent trends in the utilisation of sugarcane for different purposes in the important producing states. The proportion of sugarcane utilised for the manufacture of sugar has been increasing in Andhra Pradesh, Maharashtra and Madras while it has remained unchanged in the case of Mysore. On the other hand, in Uttar Pradesh, Bihar and Punjab the proportion of sugarcane utilised for the manufacture of gur has been rising.

3.3. At the all-India level, on an average, about one-eighth of the total production of sugarcane was utilised for the purpose of planting, chewing and juice-drinking. Utilisation for manufacture of sugar was of the order of one-fourth of the production. Five-eighths of the production was converted into gur and khandsari, the use for the manufacture of the latter having been estimated at not more than 5 per cent. On the whole, over the two periods, while the production of sugarcane in the country increased by about 11 per cent the proportion utilised for manufacture of sugar increased by about 6 per cent and that for gur and khandsari by 14 per cent. Thus, the increase in the quantity of sugarcane used for sugar has not been commensurate with the increase in the production of sugarcane.

3.4. There has been a marked change in the share of the important sugarcane producing states in the total quantity of sugarcane utilised for manufacture of sugar. Apart from the fact that in Andhra Pradesh, Madras, and Maharashtra, the utilisation of sugarcane for manufacture of sugar has been increasing, the share of these states in the total quantity of sugarcane utilised for the purpose in the country has also been on the increase.

### 4. *Progress of Sugar Industry*

4.1. The growth of the organised sugar industry in India is relatively recent; its rapid progress has taken place since the early thirties after the grant of protection in 1932. The number of sugar factories increased from 31 prior to the grant of protection to 56 in 1932-33, 111 in 1933-34, 128 in 1934-35 and 137 in 1936-37. This led to over-production of sugar as a result of which the expansion of the industry became slow and halting in the later years.

4.2. In July 1949, Government asked the Tariff Board to examine the case for the continuance of protection beyond March 31, 1950. The Tariff Board felt that the continuation of protection granted to the industry for 18 years had produced an attitude of complacence on the part of Government, industry and cultivator so that they had not taken sufficient steps to

## TABLE II. 3—*Utilisation of Sugarcane*

| state | average production of sugarcane (in terms of cane) ('000 tonnes) |  | percentage of production utilised for |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|
|  |  |  | manufacture of sugar |  | planting, chewing, juice drinking |  | manufacture of gur and khandsari |  |
|  | 1956-57 to 1960-61 | 1961-62 to 1963-64 | 1956-57 to 1960-61 | 1961-62 to 1963-64 | 1956-57 to 1960-61 | 1961-62 to 1963-64 | 1956-57 to 1960-61 | 1961-62 to 1963-64 |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| Andhra Pradesh . . . . . . . | 6,519 | 8,144 | 23·9 | 24·6 | 7·6 | 7·7 | 68·5 | 67·7 |
| Bihar . . . . . . . . | 5,942 | 5,457 | 57·5 | 49·2 | 14·2 | 14·2 | 28·3 | 36·6 |
| Madras . . . . . . . . | 4,528 | 5,923 | 20·9 | 22·6 | 10·1 | 10·1 | 69·0 | 67·3 |
| Maharashtra . . . . . . . | 8,938 | 11,436 | 34·2 | 38·3 | 9·6 | 9·5 | 56·2 | 52·2 |
| Mysore . . . . . . . . | 4,057 | 6,075 | 19·9 | 19·0 | 9·2 | 9·1 | 70·9 | 71·9 |
| Punjab . . . . . . . . | 8,007 | 8,748 | 12·1 | 9·9 | 12·5 | 12·5 | 75·4 | 77·6 |
| Uttar Pradesh . . . . . . . | 46,386 | 47,334 | 25·1 | 23·5 | 14·0 | 14·2 | 60·9 | 62·3 |
| All-India . . . . . . . | 90,929 | 1,01,115 | 25·7 | 24·5 | 12·4 | 12·2 | 61·9 | 63·3 |

improve the overall efficiency of the industry so as to bring down the cost of production. The Tariff Board, therefore, recommended that protection to sugar industry should not be continued beyond March 31, 1950.

4.3. In 1950-51, prior to the initiation of the First Five Year Plan, there were 139 sugar factories working in the country of which 3 were co-operative and 136 joint-stock and other factories. The total sugar production capacity was of the order of 16·68 lakh tonnes per annum of which 16·50 lakh tonnes per annum was contributed by the joint-stock and other factories. Of the 3 co-operative sugar factories, one was in Maharashtra and 2 in Andhra Pradesh. The sub-tropical belt had 109 sugar factories, accounting for 78 per cent of both the total number of factories and the overall sugar production capacity in the country.

4.4. By the end of the First Plan, the total sugar production capacity increased to 17·77 lakh tonnes. There was a gradual increase in the capacity under the Second Plan to 24·47 lakh tonnes in 1960-61. The target for the capacity at the end of the Third Five Year Plan was fixed at 35·60 lakh tonnes. The installed capacity is expected to be 32·5 lakh tonnes in 1965-66.

4.5. Regulated and planned development of sugar industry was initiated in May 1952, under the Industries (Development and Regulation) Act 1951, and the licensing policy adopted by Government brought about two important changes in the structure of the sugar industry. First, while in the earlier years the development of sugar industry took place in the sub-tropical belt, a large proportion of the capacity, licensed after 1952, went to the tropical belt. Second, due to the deliberate policy of Government of encouraging co-operatives, there has been a significant development of the co-operative sector in the sugar industry.

4.6. The number of sugar factories working in 1963-64 increased to 194 with an installed capacity of 28·74 lakh tonnes. The number of co-operative factories increased to 48, representing about 22 per cent of the above installed capacity. The share of the sub-tropical belt in the number of sugar factories and installed capacity declined while that of the tropical belt increased. On the whole, the tropical belt contributed about 40 per cent of the installed capacity. The co-operative sector in the sugar industry also developed relatively more in this belt.

## 5. *Production of Sugar*

5.1. In any year, the level of production of sugar in the country depends upon various factors, the main amongst which are: (i) level of production of sugarcane; (ii) availability of sugarcane to the vacuum pan factories; (iii) production capacity of the sugar industry; (iv) recovery of sugar from sugarcane; (v) duration of crushing season; and (vi) Government policy in regard to production, price and distribution of sugar.

5.2. The factors which influence the overall production of sugarcane have been mentioned earlier. The availability of sugarcane to the factories is largely dependent upon the size of the crop, the level of minimum price of sugarcane and the prevailing market prices of gur and khandsari. The system of securing sugarcane by factories also influences the quantities supplied to them. Ordinarily, the grower is anxious to sell as much sugarcane as possible to the factories and to use only the balance for the production of gur and khandsari. However, when prices of gur and khandsari rise above normal levels, there is a tendency for the supply of sugarcane to be diverted from the manufacture of sugar to that of gur and khandsari. While in some states the system of marketing of sugarcane more or less binds the growers to sell their produce to the factories whatever the prices of gur and khandsari might be, in other states growers have felt free to offer to the factories varying quantities of sugarcane in different years.

5.3. The recovery of sugar from sugarcane is influenced mainly by the variety of cane, the time of its crushing and the working efficiency of the sugar factories. A large proportion of the sugarcane crop in the country pertains to late varieties. However, in some states, particularly Maharashtra and Madras, some early varieties are also grown. Besides, cultivators in these states spread the sowing over a longer period, whereby the maturity time of the crop gets staggered.

5.4. As pointed out earlier, the installed production capacity of the sugar industry has been progressively increasing during recent years due to installation of new factories and expansion of the capacity of existing units. Prices of sugar have been sought to be regulated through periodic releases and also, quite often, through the fixation of ex-factory prices. While ex-factory prices have generally been fixed on the basis of cost of production of sugar, releases of sugar have generally been regulated in such a manner as to maintain the price of sugar at a level more or less consistent with the minimum price of sugarcane. Besides, special incentives have been given to the sugar industry in some years to extend the crushing season for augmenting the production of sugar by way of concession in the price of sugarcane crushed outside the normal crushing season, rebate in the basic excise duty on excess production of sugar, remission in the cess payable on excess cane crushed, etc. On the other hand, curbs have been imposed, such as during 1961-62, on the level of sugar production in order to restrict it when there was unduly large accumulation of sugar stocks.

5.5. Table II.4 shows the production of sugarcane, quantity crushed for manufacture of sugar, installed capacity of the industry, quantity of sugar produced, average duration of crushing, recovery percentage of sugar, minimum price of sugarcane and price of gur during the period 1950-51 to 1963-64. A decrease or increase in the production of sugarcane has usually led to a decline or rise in the quantity crushed for the manufacture of sugar. But, whenever the parity between the prices of sugarcane and gur turned favourable to the latter, the production of sugar suffered even when the production of sugarcane actually increased.

5.6. Since the inception of the First Five Year Plan, the production of sugar (Chart IV) in the country has oscillated like a pendulum, the lowest production of 10·30 lakh tonnes during 1953-54 being almost one-third of the highest production of 30·29 lakh tonnes in 1960-61. Table II. 5 shows the state-wise break-up of production of sugar during 1950-51 and 1963-64.

TABLE II.4—*Production of Sugar*

| year | production of sugar-cane ('000 tonnes) | cane crushed for sugar ('000 tonnes) | installed capacity of sugar industry (lakh tonnes) | production of sugar (lakh tonnes) | average duration of crushing (days) | percentage of recovery of sugar | minimum price of sugarcane per quintal (Rs.) | price of gur per quintal (Rs.) (Hapur Phatwa No. 1) |
|---|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| 1950-51 . . . . . . . | 69,220 | 11,349 | 16·68 | 11·34 | 101 | 9·99 | 4·69 | 53·70 |
| 1951-52 . . . . . . . | 74,760 | 15,891 | 16·68 | 15·20 | 132 | 9·57 | 4·69 | 31·06 |
| 1952-53 . . . . . . . | 61,860 | 13,219 | 16·68 | 13·18 | 113 | 9·97 | 3·52 | 44·90 |
| 1953-54 . . . . . . . | 53,848 | 10,092 | 16·68 | 10·30 | 86 | 10·07 | 3·85 | 46·05 |
| 1954-55 . . . . . . . | 70,549 | 16,269 | 16·68 | 16·22 | 132 | 9·93 | 3·85 | 28·66 |
| 1955-56 . . . . . . . | 72,692 | 19,234 | 17·77 | 18·90 | 145 | 9·83 | 3·85 | 31·50 |
| 1956-57 . . . . . . . | 82,908 | 21,197 | 18·90 | 20·74 | 150 | 9·73 | 3·85 | 31·92 |
| 1957-58 . . . . . . . | 83,651 | 20,065 | 20·62 | 20·00 | 129 | 10·01 | 3·85 | 47·33 |
| 1958-59 . . . . . . . | 86,149 | 19,804 | 22·16 | 19·51 | 118 | 9·84 | 3·85 | 51·88 |
| 1959-60 . . . . . . . | 91,394 | 24,812 | 23·21 | 24·82 | 138 | 9·92 | 4·34 | [illegible]·17 |
| 1960-61 . . . . . . . | 110,544 | 31,113 | 24·47 | 30·29 | 166 | 9·74 | 4·34 | 41·75 |
| 1961-62 . . . . . . . | 103,967 | 27,948 | 25·16 | 27·14 | 148 | 9·77 | 4·34 | 52·22 |
| 1962-63 . . . . . . . | 94,470 | 20,743 | 26·85 | 21·52 | 106 | 10·28 | 4·34 | 69·02 |
| 1963-64 . . . . . . . | 104,908 | 25,761 | 28·74 | 25·69 | 122 | 10·00 | 4·69 | 77·14 |

TABLE II.5—*Share of Sub-tropical and Tropical Belts in Production of Sugar*

| state | 1950-51 production (lakh tonnes) | 1950-51 percentage of total production | 1963-64 production (lakh tonnes) | 1963-64 percentage of total production |
|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) |
| ALL-INDIA | **11·34** | **100·00** | **25·69** | **100·0** |
| *Sub-tropical* | **8·74** | **77·1** | **14·63** | **56·9** |
| Uttar Pradesh | 6·04 | 53·3 | 11·07 | 43·1 |
| Bihar | 2·29 | 20·1 | 2·39 | 9·3 |
| Punjab | 0·21 | 1·9 | 0·69 | 2·7 |
| Madhya Pradesh | 0·13† | 1·2 | 0·21 | 0·8 |
| West Bengal | 0·04 | 0·3 | 0·10 | 0·4 |
| Rajasthan | 0·01 | 0·1 | 0·07 | 0·3 |
| Orissa | 0·02 | 0·2 | 0·06 | 0·2 |
| Assam | .. | .. | 0·04 | 0·2 |
| *Tropical* | **2·60** | **22·9** | **11·06** | **43·1** |
| Maharashtra } Gujarat } | 1·24 | 10·9 | 5·44 | 21·2 |
| | | | 0·42 | 1·5 |
| Andhra Pradesh | 0·24‡ | 2·1 | 2·36 | 9·2 |
| Madras | 0·93 | 8·2 | 1·43 | 5·6 |
| Mysore | 0·15 | 1·4 | 1·17 | 4·5 |
| Kerala | 0·04 | 0·3 | 0·09 | 0·4 |
| Pondicherry | .. | .. | 0·15 | 0·6 |

†Relates to erstwhile Madhya Bharat State.

‡Relates to erstwhile Hyderabad State.

## 6. *Productivity in Sugar Industry*

6.1. The input-output data for the Indian Sugar Industry for the period 1948—61, collected during the course of the Census of Indian manufactures and the Annual Survey of Industries, was subjected to productivity analysis with a view to studying the performance of the industry. By defining total factor productivity as the the ratio of total output to all inputs, both measured in constant prices, no upward or downward trend was visible in the productivity of the industry. An examination of the partial productivities[1] of different groups of inputs revealed that the partial productivities of fixed assets, labour and salaried persons improved considerably during the period under reference and this improvement came about as a direct consequence of the improvement in the level of utilisation of installed capacity of the industry. However, these gains were offset by the steep decline in the partial productivity of raw materials other than cane, notably clarificant materials, and the partial productivity of non-fixed assets. The fall in the productivity of clarificants was the direct result of the industry's concerted attempt at improving the quality of its product, namely, sugar. But the increasing intensity with which sulphur is being used by the industry—it is estimated that sulphur consumption per unit of sugar output has been increasing at the rate of 1·2 per cent per annum during the period under reference—has a significant bearing on the scarce foreign exchange resources of the country.

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[1] Partial productivity of a given input is defined as the ratio of the index of total output to the index of the given input.

6.2. An examination of the performance of the sugar industry at regional level revealed a picture broadly similar to that at the all-India level, with the possible exception of erstwhile Bombay region (Maharashtra and Gujarat) for which some evidence of an upward trend in total factor productivity was available. Two additional important facts which emerge out of this regional analysis are worth noting. First, while erstwhile Madras (Madras and Andhra Pradesh) and Bombay regions showed significant upward trend in respect of the partial productivity of sugarcane, a very significant downward trend was exhibited by the industry of Bihar and a slight downward trend was discernible in the case of U.P. Closer analysis revealed that the downward drift in the sugarcane productivity for Bihar is mainly accounted for by the substantial extension in the duration of the crushing season in this state during the period 1948—61. Second, the industry in different regions revealed varying rates of increase in respect of the intensity of sulphur use. Compared to the all-India rate of 1·2 per cent per annum, the industry in Madras increased its intensity of sulphur use by about 7 per cent per annum, Bihar by 2·3 per cent per annum, Bombay by 1·3 per cent per annum, and U.P. by 0·7 per cent per annum. It is worth noting that despite the substantial progress in the adoption of carbonation technique by the U.P. sugar factories between 1948 and 1961 the industry in this state has not reduced its intensity of sulphur use.

## 7. *Production of Gur and Khandsari*

7.1. Table II.6 shows the production of sugarcane, quantity of sugarcane production utilised for the manufacture of gur and khandsari, minimum prices for sugarcane and prevailing market prices of gur from year to year.

7.2. About five-eighths of the production of sugarcane in the country is nomally utilised for the manufacture of gur and khandsari. However, the actual utilisation of sugarcane for gur and khandsari varies from year to year, depending upon the level of sugarcane production and prevailing market prices of gur and khandsari in relation to the minimum price of cane. The relative level of gur prices has, however, been the more important factor. For example, even in a year of short production of sugarcane, such as 1962-63, the production of gur did not decline proportionately to that of sugarcane, as the price of gur was more remunerative than that of sugarcane paid by factories. Again in a year when the production of sugarcane registered a very substantial increase, as 1960-61, the production of gur did not show a proportionate rise mainly due to decline in the price of gur. Apart from other factors, the relative level of gur prices has thus been largely responsible for the diversion of supplies of sugarcane to and from sugar factories.

### TABLE II.6—*Estimated Production of Gur and Khandsari*

| year | production of cane (in terms of cane) (million tonnes) | quantity of cane utilised for gur and khandsari (million tonnes) | percentage increase (+) or decrease(—) over previous year | minimum price of sugarcane (Rs. per quintal) | price of gur (Rs. per quintal) (Hapur Phatwa No. 1) | relationship between sugarcane and gur prices | estim product of gur and khandsa i (million tonnes) |
|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| 1956-57 . . . . | 82·91 | 51·30 | | 3·85 | 31·92 | 12·1 | 5·20 |
| 1957-58 . . . . | 83·65 | 53·32 | (+) 3·9 | 3·85 | 47·33 | 8·1 | 5·42 |
| 1958-59 . . . . | 86·15 | 55·76 | (+) 4·6 | 3·85 | 51·88 | 7·4 | 5·67 |
| 1959-60 . . . . | 91·39 | 55·31 | (—) 0·8 | 4·34 | 44·17 | 9·8 | 5·62 |
| 1960-61 . . . . | 110·54 | 65·81 | (+) 19·0 | 4·34 | 41·75 | 10·4 | 6·69 |
| 1961-62 . . . . | 103·97 | 63·28 | (—) 3·8 | 4·34 | 52·22 | 8·3 | 6·43 |
| 1962-63 . . . . | 94·47 | 62·31 | (—) 1·5 | 4·34 | 69·02 | 6·3 | 6·31 |
| 1963-64 . . . . | 104·91 | 66·55 | (+) 6·8 | 4·69 | 77·14 | 6·1 | 6·73 |

# CHAPTER III

## SUGAR POLICY—A RETROSPECT

Government policy regarding sugar during the last fifteen years has been directed towards the following objectives:

(a) assuring a fair price for sugarcane to the cultivator;
(b) regulating the development of sugar industry;
(c) ensuring adequate cane supplies to sugar factories;
(d) protecting the interests of the consumer; and
(e) encouraging exports for earning foreign exchange.

The measures adopted by Government, from time to time, for achieving the above objectives include: (i) fixation of minimum sugarcane price to be paid by sugar factories to the grower, (ii) licensing of capacity so as to regulate expansion of existing sugar factories and establishment of new ones, (iii) fixation of ex-factory prices of sugar, delimitation of zones and incentives for increasing sugar production, (iv) regulating production, prices, movement, etc., in respect of gur and khandsari, and (v) distribution of sugar for domestic consumption and exports.

### 2. *Minimum Sugarcane Price*

2.1. The protection granted by the Sugar Industry (Protection) Act, 1932, was intended to benefit both the sugar industry and the cane grower. In practice, however, the benefit was reaped more by the industry than the cane grower. Accordingly, with a view to ensuring to the farmer a fair and reasonable price for his produce the Central Sugarcane Act, 1934, was enacted. This Act empowered the State Governments to fix minimum prices for sugarcane to be paid by sugar factories. The provisions of this Act were applied in U.P. and Bihar from the crop season 1934-35. Subsequently, the Governments of U.P. and Bihar enacted their own legislations to fix sugarcane prices and to regulate the system of purchase of sugarcane by sugar factories. Other states also followed suit. The system of fixing minimum prices for sugarcane by the State Governments continued till 1949-50. The minimum prices of sugarcane during these years varied from state to state as may be seen from Table III. 1.

2.2. As different prices were being fixed by different State Governments, the Government of India, in order to introduce uniformity, assumed in 1950 the authority to prescribe every year the minimum price of sugarcane by promulgating the Sugar and Gur Control Order (1950). Under the provisions of this Order, the Government of India fixed the minimum price of sugarcane for the first time in 1950-51 on an all-India basis. In August, 1955, the Government of India issued the Sugarcane (Control) Order (1955). Since then the minimum price of sugarcane has been fixed under this Order having regard to such factors as (a) the cost of production of sugarcane, (b) the return to the growers from alternative crops and the general trend of prices of other agricultural commodities and (c) fair price of sugar for the consumer.

## TABLE III.1—*Minimum Prices of Sugarcane in Different States*

(rupees per maund of 82 2/7 lbs.)

| state | minimum prices | | | | | |
|---|---|---|---|---|---|---|
| | 1938-39 | 1945-46 | 1946-47 | 1947-48 | 1948-49 | 1949-50 |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| Bihar | 0-6-10<br>(1·15) | 0-15-0<br>(2·52) | 1-4-0<br>(3·35) | 2-0-0<br>(5·36) | 1-13-0<br>(4·85) | 1-10-9<br>(4·47) |
| Madras | .. | 0-13-9<br>(2·30) | 1-3-10<br>(3·32) | 2-0-0<br>(5·36) | 1-15-4<br>(5·25) | 1-8-8*<br>(4·12)<br>1-11-6**<br>(4·61)<br>1-11-9†<br>(4·63) |
| Punjab | .. | 1-0-0<br>(2·68) | 1-6-0<br>(3·67) | 2-0-0<br>(5·36) | .. | 1-13-0‡<br>(4·85)<br>1-12-0<br>(4·69)@ |
| Uttar Pradesh | 0-6-10<br>(1·15) | 0-14-0<br>(2·33) | 1-4-0<br>(3·35) | 2-0-0<br>(5·36) | 1-10-0<br>(4·34) | 1-10-0<br>(4·34) |
| West Bengal | .. | 1-2-0<br>(3·00) | 1-6-0<br>(3·67) | 2-0-0‡<br>(5·36)<br>1-14-0<br>(5·00)@ | .. | .. |
| Mysore | .. | 0-14-3<br>(2·38) | 1-3-3<br>(3·21) | 1-10-3<br>(4·39) | .. | 1-10-0<br>(4·34) |

*In respect of sugar factories having a crushing capacity of 300 tons per day.

**In respect of sugar factories having a crushing capacity between 300 tons and 1200 tons per day

†In respect of sugar factories having a crushing capacity over 1200 tons per day.

‡For gate delivery.

@For delivery at out-stations.

NOTE.—Figures in brackets are Rs. per quintal.

*Source* : Indian Sugar Statistics, 1950-51—Directorate of Economics and Statistics, 2.3. The all-India minimum price of sugarcane for 1950-51 season was initially fixed by the Government of India at Rs. 4·34 per quintal. The minimum price was subject to periodic revision, but it remained at more or less the same level, except for the year 1952-53. For the years 1958-59 to 1961-62, in addition to the minimum sugarcane price fixed by Government, an extra price was also payable to growers, on a statutory basis, under a prescribed price linking formula, by such sugar factories as were able to realise higher prices for sugar. The underlying principle of the formula was that growers, supplying cane to a sugar factory, should share with the factory owner the net sugar price realised by the latter during the year, in the same ratio as the cost of cane bore to the factory's cost of production of sugar (excluding taxes) during that year. The system of relating the minimum price of sugarcane with the recovery of sugar from cane was introduced, on an all-India basis, in November, 1962 in replacement of the prevailing practice of fixing the minimum price on a purely weight basis. With the adoption of the procedure of relating the minimum price of sugarcane with the recovery of sugar, the system of extra payment to growers was discontinued. The present formula guarantees a specified minimum price for sugarcane upto a certain level of recovery and provides for a premium of 0·1 point increase in recovery above this level.

### 3. *Cess or Purchase Tax*

3.1. A cess at varying rates was levied by important sugar producing states on cane crushed for the manufacture of sugar by factories. It was imposed first by the Governments of U.P. and Bihar in 1937-38 and subsequently by the Governments of Bombay and Mysore in 1947-48. It was levied in Madras in 1950-51 and in Punjab in 1952-53. During the period 1952-53 to 1960-61, the rate of cess varied from 24 paise per quintal in Punjab to 59 paise per quintal in Mysore. The cess was replaced by a purchase tax on sugarcane in U.P., Gujarat and Mysore in 1961-62 and in Maharashtra and Andhra Pradesh in 1962-63. In order to augment sugar production, the Governments of U.P., Bihar and Punjab allowed, from time to time, rebate in cane cess or purchase tax, at prescribed rates, to sugar factories for early crushing.

### 4. *Development of Sugar Industry*

4.1. As mentioned earlier, the sugar industry enjoyed protection for a period of 18 years from 1932-33 to 1949-50. The protective duty which varied from Rs. 9·06 per cwt. to Rs. 9·25 per cwt. (Rs. 17·83 to Rs. 18·21 per quintal) in 1937 was reduced to Rs. 6·75 per cwt. (Rs. 13·29 per quintal) subsequently. In addition, Government imposed in 1934 an excise duty of Rs. 1·31 per cwt. (Rs. 2·58 per quintal) which was raised to Rs. 2 in 1937 (Rs. 3·94 per quintal) and to Rs. 3 in 1940 (Rs. 5·91 per quintal).

4.2. The administration of licensing policy on a regular basis dates from 1952, after the enactment of the Industries (Development and Regulation) Act, 1951. Prior to this enactment, the sugar industry was being regulated by the State Governments concerned under their own statutes.

4.3. At the beginning of the First Five Year Plan, the existing capacity was considered to be sufficient to meet the estimated requirement of sugar by 1955-56, which was placed at 15·2 lakh tonnes per annum. The estimate for the First Plan was, however, revised in 1954 to 20·3 lakh tonnes and a tentative estimate for the Second Plan was also made simultaneously at 25·4 lakh tonnes. Following the above decisions, the Government of India invited in April, 1954, applications for licences for setting up new factories as well as for expansion of the existing units, so as to achieve the targeted capacity.

4.4. A Licensing Committee was set up which examined the applications on the basis of the following principles: (i) availability of sugarcane and facilities of transporting raw material to the factory; (ii) possibility of developing sugarcane cultivation in the area having regard to availability of irrigation facilities, weather conditions and other relevant factors; (iii) technical feasibility and economic viability of the project; and (iv) capacity of the entrepreneurs to complete the proposed project in time. In the light of its recommendations, Government issued licences for the establishment of 52 new factories (of which 38 were co-operatives) and expansion of 71 existing units covering an additional capacity of 12·1 lakh tonnes. The total capacity thus came to 27·3 lakh tonnes (re-assessed at 28·8 lakh tonnes) which somewhat exceeded the targeted capacity of 25·4 lakh tonnes for the end of the Second Plan, to take care of infructuous licensing. Further licensing was stopped at the beginning of 1957.

4.5. Government again invited applications in August, 1959, against the Third Plan target fixed at 35·6 lakh tonnes. A large number of applications were received and the Ministry of Industry appointed a Negotiating Committee in 1960. The Negotiating Committee examined all these applications on the basis of the following principles indicated by Government:

> "It was not necessary to make any state-wise allocation of the additional capacity to be licensed. All applications were to be considered on merit, the over-riding consideration being the availability of adequate quantities of sugarcane. Other things being equal, preference was to be given to the establishment of co-operative factories."

4.6. Licences were granted for the establishment of 20 new units (of which 16 were co-operatives) and expansion of 40 existing units aggregating to a capacity of 5·4 lakh tonnes of sugar. The total capacity thus stood at 34·2 lakh tonnes. State-wise break-up of the additional capacity licensed is given in statistical appendices. The share of the sub-tropical belt in the total capacity came down from 78·2 per cent at the beginning of the Second Five Year Plan to 58·6 per cent in 1960-61.

4.7. Consequent upon an over-production of sugar during the years 1959-60 and 1960-61 Government decided to suspend further licensing in May, 1961. In June, 1963, however, due to increase in demand for sugar for internal consumption as well as exports, Government decided to resume licensing for an additional capacity of 8 lakh tonnes, to raise the total capacity to 40 lakh tonnes—the excess licensing over the Third Plan target being treated as advance licensing against the Fourth Plan target. For licensing this capacity, the pending applications and those received up to February 29, 1964, were considered by a Screening Committee set up by Government for this purpose. The Screening Committee was required to examine applications on the basis of the following principles: (i) licences were to be granted purely on merits of the project judged from all angles, particularly, availability of cane supplies, economic viability and capacity of the applicant to execute the project in the minimum time; (ii) first preference was to be given to expansion of existing units in order to improve their economy, by making un-economic units economic or less uneconomic, and by making economic units more efficient; (iii) second priority was to go to licensing of new units for which preference was to be given to co-operatives, subject to the conditions mentioned in (i) above; new units were to be established only in such areas as had sufficient cane for the capacity of the unit proposed to be set up or where there was a reasonable prospect of increasing the production of cane to the required extent within a foreseeable future; the capacity of the new units was to range from 1,200 to 2,000 tonnes of cane per day depending upon availability; (iv) in licensing additional capacity, due regard was to be given to integrated projects, so that by-product industries could be set up alongside sugar factories.

4.8. The Screening Committee recommended grant of licences for expansion in 61 existing units (39 joint-stock and 22 co-operatives) and for establishment of 9 new factories (all co-operatives) for an additional capacity of 5·30 lakh tonnes as follows:

*Additional Capacity*

(lakh tonnes)

| | co-operatives | joint-stock | total |
|---|---|---|---|
| (*i*) expansion . . . . . . . | 1·66 | 2·06 | 3·72 |
| (*ii*) new factories . . . . . . . | 1·58 | . . | 1·58 |
| total . . . | 3·24 | 2·06 | 5·30 |

In addition to this, from the applications for new sugar factories, 34 applications (29 co-operatives and 5 joint-stock) were selected for on-the-spot examination, so as to assess the availability and prospects for development of cane before taking a final decision on these applications. The licensed capacity, according to the latest information available to the Commission, is 41·5 lakh tonnes. The installed capacity is expected to be of the order of 32·5 lakh tonnes in 1965-66 as against 30·5 lakh tonnes in 1964-65.

5. *Sugar Control*

5.1. The year 1936-37 registered a record production of sugar. Stocks accumulated and prices declined. It appeared that the industry was about to face a crisis. At this stage, the Indian Sugar Syndicate was formed, as a voluntary organisation, with the objective of regulating the sales of sugar by member factories. It fixed the minimum selling prices for sugar and issued quotas for sales by member factories from time to time. In 1937-38, several factories which had earlier joined the Syndicate broke away to secure the advantage of effecting forward sales, which had been prohibited by the Syndicate. It appeared that the Syndicate could no longer function successfully and it approached the Governments of U.P. and Bihar for help. The two State Governments provided in the Rules under the Sugar Factories Control Acts that licences for crushing should be issued only to those factories which were members of the Syndicate. By conferring this legal recognition on the Syndicate, the Governments of U.P. and Bihar compelled all the factories located in these two states to join it. The Syndicate thus became the sole selling organisation for the factories in U.P. and Bihar. The few factories outside these two states which were earlier its members withdrew from the Syndicate. The Syndicate continued to function, sometimes with the recognition of the State Governments and sometimes without it. Ultimately, following the recommendations of the Tariff Board, Government's recognition was finally withdrawn in 1950; the stipulation making the membership of the Syndicate obligatory on the part of the factories in U.P. and Bihar for obtaining crushing licences was cancelled.

5.2. Statutory control on sugar was first imposed in April, 1942, under the Sugar Control Order (amended and re-issued in July, 1943 under the title—The Sugar and Sugar Products Control Order). The Sugar Controller to the Government of India regulated production, distribution and prices of sugar. With effect from May 1, 1942, no sugar factory was permitted to effect sales of sugar to persons other than those authorised by the Sugar Controller. Allocations of monthly quotas of sugar to be delivered by U.P. and Bihar factories to other states were made by the Sugar Controller.

5.3. Control on sugar was removed with effect from December 8, 1947, after which the Indian Sugar Syndicate again became the selling organisation for factories in U.P. and Bihar. The Syndicate committed several irregularities. Many factories and/or their selling agents charged heavy premia over the fixed price. This led to re-imposition of statutory control. Accordingly, ex-factory price of Rs. 76·35 per quintal for D-24 and corresponding prices for other grades of sugar, fixed by the Syndicate, were declared to be the statutory prices under the Essential Supplies (Temporary Powers) Act with effect from September 2, 1949.

5.4. The production of sugar during 1949-50 was less than that in the previous season. There was a large-scale diversion of cane supply to the manufacture of gur and khandsari; there was no control on production, price and movement of these commodities. Control on sugar was, therefore, relaxed in December, 1950, and production over and above 90 per cent of that produced by each factory during 1949-50 was allowed to be sold without any restrictions on price or distribution. This policy of selective control was subsequently modified to the extent that 95 per cent of the average production of each factory during the two years ending 1949-50 was fixed as the basic quota of the factory, and one-half of the production of each factory in excess of its basic quota was allowed to be sold in the free market while the other half, together with the basic quota, was reserved for distribution at controlled prices. This policy was followed in 1951-52 season.

5.5. In view of the improved position, control on sugar was removed in 1952-53 except for a small part reserved for controlled distribution. In September, 1952, it was decided to export 2 lakh tonnes of sugar. Since, however, an upward trend in sugar prices became evident export of sugar was banned in January, 1953. There was no control on prices and distribution of sugar during the season 1953-54. Domestic consumption of sugar increased significantly. The increased consumption and anticipated low production caused a spurt in sugar prices in March-April, 1954 Instead of imposing control, Government took certain other measures to check the rising trend in sugar prices. These included banning forward sales, accelerating the movement of sugar from factories and importing sugar. In April, 1954, Government requisitioned 25 per cent of the production of all factories for distribution on a tender basis. During the seasons 1954-55, 1955-56 and 1956-57, Government did not fix ex-factory prices for sugar.

5.6. Sugar prices began to rise after the middle of April, 1958, due to short supply. About the same time, additional excise duty, sales tax and surcharge on railway freight were levied. Moreover, the Sugar Export Promotion Ordinance was promulgated towards the end of June. 1958 and a small export quota was announced by Government. The market reacted sharply and prices rose to a level which was in excess of the reasonable rise anticipated due to exports. The total effect of these measures was sharp rise in prices and this led to the re-imposition of controls.

5.7. In 1958, the Government of India asked the Tariff Commission to examine and report on the cost structure of sugar and fair price payable to the sugar industry. The cost structure had been examined earlier by two Expert Committees, once in 1951 and again in 1955. The first Expert Committee did not favour regional schedules, but constructed an all-India schedule. The second Expert Committee suggested certain amendments in the all-India schedule and recommended adoption of the all-India schedule till regional schedules became ready. The Tariff Commission recommended four regions for the fixation of fair prices on the basis of the duration of crushing and recovery of sugar. These were (i) Northern; (ii) Madhya Pradesh and Rajasthan; (iii) Bombay; and (iv) Southern. Further, in October, 1960, the Tariff Commission was asked to examine the case for revision of the price linking formula of 1958 for sharing the price of sugar between the factory and the cane grower.

5.8. Government also decided in 1958 to requisition and distribute sugar at fixed prices. Other measures adopted were: (i) tightening of bank advances: (ii) licensing of wholesale dealers in sugar by State Governments; (iii) banning of movement of sugar from Delhi and Greater Bombay; (iv) assignment of specific quotas to individual states; and (v) banning inter-state movement of sugar. Finally, with effect from July 1, 1959, Government took over the entire production of sugar for direct allocation.

5.9. With a view to maximising the production of sugar during the seasons 1959-60 and 1960-61, Government announced, for the first time, certain incentives, such as, (i) concession of 31 paise per md. (83 paise per quintal) in the minimum price of cane to factories in U.P. and Bihar; (ii) rebate of 50 per cent in the basic excise duty on all sugar produced in excess of the average of the previous two seasons; and (iii) relaxation and ultimate withdrawal of margin requirements on bank advances. These measures resulted in a satisfactory supply position of sugar during 1959-60 and 1960-61. In view of this improvement, all controls over prices, distribution and movement of sugar were removed with effect from September 28, 1961, except the system of regulating monthly release of sugar from factories. During 1960-61, the production of sugar reached a peak level of 30·29 lakh tonnes. The carry-over stock at the end of the year was as high as 12·60 lakh tonnes. Government promulgated on September 29, 1961, the Sugar (Regulation of Production) Ordinance, 1961 (later replaced by an Act) and imposed a cut of 10 per cent based on the output of 1960-61 in the production of sugar during 1961-62.

5.10. The years 1961-62 and 1962-63 witnessed a substantial fall in the production of sugar. Prices started rising from the middle of January, 1963. Government made larger releases to check the upward trend of prices. Certain other measures adopted by Government to curb the price rise were: (i) stepping up of wagon supply for movement of sugar; (ii) re-introduction of the system of licensing of wholesale dealers in sugar; (iii) advising the factories in western U.P. to offer higher prices for sugarcane to the growers than the minimum fixed; (iv) suggesting to the Government of U.P. to discourage licensing of cane crushers in the factory areas; and (v) banning of forward trading in gur with effect from January 18, 1963. Despite all these measures, prices of sugar recorded abnormal rise from the beginning of April, 1963.

5.11. Therefore, the Government of India promulgated the Sugar (Control) Order, 1963, re-imposing controls on prices and distribution of sugar with effect from April 17, 1963. Ex-factory prices of sugar in different regions were fixed. The ex-factory prices fixed by Government in April, 1963 were lower than the market prices to start with. They were, however, revised subsequently upwards and, in most cases, these revised prices were higher than the prices ruling just before the control was imposed. Under the system of allotment of monthly quotas of sugar to individual states, factories were directed to deliver sugar to state nominees. The State Governments were advised to fix wholesale and retail prices of sugar. Distribution of sugar within the states was left to the State Governments, so that they might evolve a suitable system keeping in view the local conditions. The State Governments were, however, advised to maintain a proper check on the activities of the wholesale and retail traders.

5.12. With a view to augmenting sugar production in 1963-64, Government decided to grant the industry a rebate in basic excise duty on additional production. The rebate was to the extent of 50 per cent on additional production between July 1, 1963 and October 31, 1963 as compared to the corresponding period of 1962 in regard to factories which commenced production during that period. As regards factories which commenced their production in November, a similar rebate on the additional production in November, 1963, as compared to the production in November, 1961 was allowed. For additional production during the normal season between November 1 or December 1, 1963 and March 31, 1964 or thereabout, the factories were entitled to a rebate in basic excise duty to the extent of 20 per cent. On additional production during the remaining period upto June 30, 1964, as compared to the corresponding period of 1962, the factories were entitled to a rebate of 50 per cent.

5.13. As already stated, the Government of India fixed ex-factory prices of sugar on April 17, 1963. The prices applicable to the 1962-63 season were revised three times between April and October, 1963. The number of zones also was increased from 16 in April, 1963 to 19 in October, 1963. For the 1963-64 season, prices were initially fixed in November, 1963 and were revised again three times between November, 1963 and July, 1964. The number of zones which stood at 19 in October, 1963 was raised to 21 in November, 1963. For the 1964-65 season, prices were fixed for 20 zones in November, 1964 and were revised in August, 1965 when Government announced increase in ex-factory sugar prices for some of the existing zones and also created two additional zones, thereby increasing the total number of zones from 20 to 22. As a result, the prices varied from Rs. 116·00 to Rs. 135·00 per quintal. Thus, the ex-factory prices are currently in force for 22 zones in place of the 4 zones recommended by the Tariff Commission and 5 in the interim report of this Commission.

### 6. *Gur and Khandsari Control*

6.1. Controls on gur and khandsari have, in the past, been imposed from time to time, in pursuance of the policy of maximisation of sugar production and consequent need to ensure adequate supplies of sugarcane to the factories at fixed minimum prices.

6.2. With the outbreak of World War II, Government felt it necessary to discourage the manufacture of gur and also to regulate its production, prices and movement with a view to stepping up the production of sugar. The Gur Control Order, 1943, was promulgated on July 24, 1943. The Order conferred upon the Gur Controller for India the following powers:

(i) to fix maximum prices for gur in any specified area;

(ii) to prohibit or restrict cane movement from any particular area;

(iii) to direct cane growers in that area to deliver cane to a particular sugar factory, in such quantity, at such prices, and at such time as may be specified by the Controller;

(iv) to prohibit or restrict manufacture of gur;

(v) to issue gur quotas to states or areas and direct producers and dealers to deliver the same; and

(vi) to regulate movement of gur.

6.3. Under this Order, forward trading in gur was prohibited in U.P. and Bihar in 1943 and movement of gur outside these states without a permit from the Gur Controller was banned. Ceiling prices of gur for U.P. and Bihar were fixed. In October, 1943, Government banned export of gur on private account from one state to another and took upon itself the monopoly of inter-state trade. Gur was to be moved only by the Governments of surplus states to those of deficit states or to their accredited representatives in accordance with instructions of the Gur Controller.

6.4. Control on gur remained operative till December, 1947, after which, in view of the satisfactory position, the Government of India's control over distribution, movement and prices of sugar and gur including sugar products was removed. Following the sugar crisis of July-August, 1949, and re-imposition of control on sugar, Government imposed restrictions on production, prices and distribution of gur and khandsari. On October 7, 1950, the Government of India promulgated the Sugar and Gur Control Order (1950). Government took a number of decisions which, *inter alia,* included: (a) licensing of *kolhus* (bullock-driven cane crushers), power-crushers and khandsari units in factory areas, and (b) fixation of statutory ceiling prices for gur and khandsari.

6.5. Between June, 1952 and March, 1963, there was no control on gur and khandsari. As pointed out earlier, in order to prevent over-production of sugar, a 10 per cent cut in production was imposed during the 1961-62 season. Simultaneously, some of the State Governments encouraged installation of more *kolhus* in order to facilitate diversion of surplus cane from factories to gur producers. These factors led to a shrinkage in the area under sugarcane in the subsequent season and also to large-scale diversion of cane to gur manufacture. The result was a substantial fall in the production of sugar during the seasons 1961-62 and 1962-63 and ultimate imposition of controls on prices and distribution of sugar with effect from April 17, 1963. As a consequence of imposition of controls on one of the three sweetening agents, *i.e.,* sugar, prices of the other two sweetening agents, *i.e.,* gur and khandsari, began to rise, resulting in diversion of cane from the former to the latter. In its effort to improve the sugar position, Government took certain regulatory measures in respect of gur and khandsari. Forward trading in gur was banned in January, 1963. The Government of U.P. stopped granting new licences for gur and khandsari units in the reserved areas of sugar factories in May, 1963. In June, the Government of India asked the State Governments to license gur and khandsari dealers. Inter-state movement of gur was regulated from October 30, 1963, under the Gur (Movement Control) Order. The Order prohibited movement of gur from one state or a specified region to another, except under permits. Quotas were fixed for movement from surplus to deficit states. Movement of khandsari had been banned earlier with effect from August 17, 1963. Further, the State Governments were empowered to demarcate areas for sugar factories, to regulate supplies of sugarcane to various users in the factory areas, to license power-crushers and khandsari units and to restrict their hours of working. The purchase tax on gur and khandsari units was increased from 16 paise to 25 paise per quintal of sugarcane in U.P.

6.6. With a view to securing equitable distribution and availability of khandsari at fair prices, the Government of U.P. issued an Order on June 9, 1964, freezing stocks of khandsari with dealers and fixing variety-wise maximum selling prices for khandsari.

6.7. Restrictions on inter-state movement of gur, imposed in October, 1963, were withdrawn towards the end of July, 1964. The price control on khandsari was removed with effect from June 30, 1965.

### 7. *Recent Sugar Policy*

7.1. As would appear from the above account, sugar policy was influenced from year to year largely by short-term considerations. The need was felt for a comprehensive policy which would ensure stability consistently with the requirements of long-term development of the industry along sound lines. Accordingly, the Government of India appointed the Sugar

Enquiry Commission on August 3, 1964. As desired by Government, the Commission submitted an interim report in September, 1964. The main recommendations of the Commission in its interim report are listed in the Annexure to this chapter.

7.2. In the sugar policy for 1964-65 season, Government made severa departures from the recommendations of the Commission. On October 13 1964, the minimum price for sugarcane was fixed at Rs. 5·36 per quintal a recommended by the Commission, but the price was linked to a minimun recovery of 10·4 per cent, instead of 9·4 per cent suggested by the Commission. The premium for extra recovery was kept unchanged. Further Government announced on November 12, 1964, the ex-factory prices o sugar for 20 zones in the country as against 5 zones recommended. Government accepted the Commission's recommendations regarding excis rebate for early crushing as well as normal season; the rebate for the norma season was, however, announced about a month after the season had started While the Commission had recommended a maximum of 40 per cent rebat for the normal crushing season Government extended it to 50 per cent fo production in excess of 20 per cent over base year's production. Government did not enforce the Commission's recommendation that such portio of the excise rebate as was not passed on to the cane growers should b constituted into a development fund.

7.3. On August 6, 1965, Government announced a further increase i ex-factory sugar prices for some of the existing zones and also created tw additional zones, thereby increasing the total number of zones from 20 t 22. Some of the factories earning excise rebate were given the addition benefit of a price increase.

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## ANNEXURE

## *Main Recommendations of the Interim Report*

### 1. *Minimum Price of Sugarcane*

(a) The minimum price should be Rs. 5·36 per quintal (Rs. 2 per maund) (at factory gate) with 9·4 per cent recovery for the 1964-65 season as a purely temporary measure.

(b) Extra premium at 4·0 paise per quintal should be allowed for every additional 0·1 per cent recovery.

### 2. *Rebate on Excise on Sugar*

(a) *Early Crushing.*—Sugar factories should be allowed a rebate on excise to the extent of 50 per cent on additional production of sugar upto 10 per cent during September and October, 1964 as compared to the corresponding period of 1963 in regard to sugar factories that were in production during that period. As regards other sugar factories which were to go into production in November, 1964, a similar rebate was suggested, to be allowed on additional production of sugar after 10 per cent in November, 1964 as compared to the production in November, 1963.

(b) *Normal Crushing.*—The sugar factories should be allowed a rebate of 20 per cent on excess additional production during 1964-65 upto the extent of 10 per cent over what was achieved during 1963-64. The factories should be given a further rebate at the increased rate of 40 per cent on the extra production over and above the 10 per cent increase of production over the level of 1963-64. In the case of new factories an additional production eligible for the rebate in excise was suggested to be reckoned as that over and above the production corresponding to 85 per cent of their production capacity.

(c) The first charge on the rebate in excise duty should be higher cane price that the factories would be induced to pay to attract more cane supplies and meet incidental costs and taxes during the 1964-65 season. The balance of the amount should be constituted into a Development Fund for the factory concerned to be spent on approved schemes of modernisation, expansion and other developmental work. Among these programmes, high priority should be given to construction of steel tanks for molasses as proper storage for the latter is of urgent national interest.

### 3. *Remission of Cane Cess*

The State Governments should be advised to continue during 1964-65 season the remission of the cane cess or purchase tax levied by them on the total purchase of cane during the early crushing period in order to enable the sugar factories to attract more cane supplies.

### 4. *Restrictions on Gur and Khandsari*

The following restrictions on the production of gur and khandsari in sugar factory areas should be imposed with a view to augmenting the production of sugar:

(i) Licensing of all existing khandsari and power crusher units and banning of new units in reserved areas or within 15—20 kilometres of a sugar factory;

(ii) Re-delimitation of reserved areas so as

  (a) to make them compact, and

  (b) either to exclude existing khandsari units and power crushers completely from reserved areas; or to provide adequate cane supply both for the sugar factory concerned and such khandsari units and power crushers as already exist in a particular reserved area. Reserved areas so re-delimited should not be disturbed for some years to come.

(iii) Shifting of existing khandsari and power crusher units from reserved areas;

(iv) Imposing excise duty or some other suitable levy on khandsari units and power crushers (and if possible '*kolhus*' above a certain size) upto such a level that their ability to pay a price for sugarcane higher than that fixed by Government for sugar factories is restricted;

(v) The existing procedure of regulating the supply of sugarcane grown in reserved areas to sugar factories through Co-operative Cane Unions where they exist should also be followed in the case of cane supplies to khandsari units and power crushers. Once the cane supplies to the khandsari units and power crushers are regulated it would be possible to get a fair idea of the volume of their production and also to control their production and prices.

(vi) In order to control the production of gur in reserved areas arrangements should be made to make an assessment of the estimate of the sugarcane crop in each reserved area, and to allocate the likely crop between the sugar factory and khandsari and gur producers. With a view to making such allocation effective, the production of gur within the reserved area should be permitted only after a specified date or be subject to some other method of regulation. Powers for ensuring this should be given to the appropriate authorities. Local officials of development departments such as Community Development, Cane Development, Agriculture and Irrigation, should be asked to co-operate in carrying on intensive propaganda among the sugarcane producers in the reserved area for delivering the recommended quantity of cane to factories.

(vii) Maximum prices for gur and khandsari may be prescribed and enforced for both on an all-India basis during the 1964-65 season.

(viii) No ban should be imposed on inter-state movement of gur and khandsar

### 5. *Storage for Carry-over Stocks*

The sugar factories should be required to keep 25 per cent of their annual production as carry-over stocks with them and any additional stock over and above this level should be carried by the factories with suitable financial assistance from Government or on Government account.

### 6. *Zones and Ex-factory Prices of Sugar for* 1964-65

(a) The following zones were recommended by the Commission:

| | |
|---|---|
| *Zone No. I* | Uttar Pradesh (except Meerut, Muzaffarnagar and Bulandshahr districts), North Bihar, West Bengal and Orissa; |
| *Zone No. II* | Meerut, Muzaffarnagar and Bulandshahr districts of U.P., Punjab, Rajasthan, Madhya Pradesh and South Bihar; |
| *Zone No. III* | Maharashtra and Gujarat; |
| *Zone No. IV* | Mysore, Andhra Pradesh, Madras, Kerala and Pondicherry. |

Assam may be treated as a separate zone by itself.

These zones might be treated as provisional to be reconstituted in the light of the results of certain cost accounting and other studies which the Commission proposed to undertake before submitting its final report.

(b) *Ex-factory prices.*—Ex-factory prices of sugar should be initially fixed and announced in October-November and then revised only in May. There should be no other *ad hoc* revisions during the course of one season. The following ex-factory prices for the 1964-65 season were worked out by the Commission:

| | Rs. per quintal |
|---|---|
| Zone No. I | 120·00 |
| Zone No. II | 125·00 |
| Zone No. III | 116·50 |
| Zone No. IV | 119·50 |
| Assam | 127·50 |

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The price schedule might, however, be worked out afresh by Government on receipt of information in respect of recovery and duration for the 1964-65 season.

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## PART II

# PROBLEMS OF DEVELOPMENT

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## CHAPTER IV

# ECONOMICS OF GROWING SUGARCANE

### 1. *Problem*

1.1. Sugarcane was grown largely in Uttar Pradesh, Punjab and Bihar until the early fifties. These three States accounted for 80 per cent of area and 70 per cent of production of sugarcane in the country. More than 75 per cent of the total production of sugar in the country was manufactured in Uttar Pradesh and Bihar. Recently, sugarcane production has expanded very rapidly in the tropical belt. The percentage share of this belt in terms of area and production of sugarcane has shown a sharp rise.

1.2. It was represented to the Commission that the tropical belt was more suited for the cultivation of sugarcane than the sub-tropical belt. On the other hand, it was also represented that, but for the deliberate policy of the State Governments in the tropical belt to encourage the setting up of new factories, sugarcane production would not have expanded so rapidly in these states. An attempt has been made in this chapter to examine in its different aspects the problem of relative advantage of sugarcane cultivation in the sub-tropical and tropical belts of the country.

1.3. The analysis that follows is broadly in two parts. In the first place, the existing situation regarding area, production and yield per acre is examined; in the second, the potentialities for developing sugarcane cultivation and hence sugar industry in different areas of the country are considered.

### 2. *Existing Situation*

2.1. Sugarcane yield varies considerably from region to region. If the object were to maximise the production of sugar from a given area, those regions which give the highest combination of per acre yield and sucrose content should be preferred. However, this would mean taking a very partial view of the matter. In the programme for agricultural development of the country, not only the production of sugarcane but also that of other crops needs to be kept in view. It is necessary to evolve a cropping pattern which would yield the maximum social advantage. It would, thus, involve an examination of not merely the yields of and recovery from sugarcane but also yields of competing crops.

2.2. An analysis of the comparative advantage of sugarcane cultivation as between any two areas requires a comparison of the ratios of per acre net returns from sugarcane with those from the competing crops in those regions. Since dependable data on cost of production are not available for all the areas and such data as are available lack comparability over time, one alternative may be to use the data on farm business income per acre, wherever available. Further, in view of the very limited possibilities of extension of cultivated area in the country, the objective of maximising production from the available land resources may also be examined by a comparison of the ratios of per acre gross values of sugarcane with those of competing crops as between the two regions. These comparisons may further be supplemented by similar comparisons based on output per rupee of input. Therefore, in the following paragraphs, the problem of comparative advantage has been analysed with the help of three available indicators: gross value, net return and input-output ratio. The analysis is based on official data pertaining to per acre yields and harvest prices and farm management survey data on cost of production and farm business income. Although the survey data for different areas are not uniformly available for the same set of years, the fact that ratios rather than absolute values have been used for mutual comparison makes the limitation less serious than it may seem at first sight.

### (a) *Comparison of ratios of per acre gross value of sugarcane as between two regions and those of competing crops between the same regions*

The data on ratios are presented in Table IV.1* given on the next page. In respect of per acre gross value of sugarcane, Andhra Pradesh stands foremost (Rs. 1900), followed by Maharashtra (Rs. 1800), Mysore (Rs. 1350), Madras (Rs. 1250), and Punjab (Rs. 850). In Bihar and Uttar Pradesh the per acre gross value lies between Rs. 500 and Rs. 600. But the ratio of per acre gross value of sugarcane to the combined per acre gross value of competing crops is the highest for Maharashtra, followed by Mysore and Andhra Pradesh. These ratios are lower in the

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*The figures in the table give comparison of ratios of per acre gross value of sugarcane and those of competing crops between each group of two states. For instance, the gross return of per acre gross value of sugarcane in Maharashtra is 229 per cent of that in U.P., while the combined per acre gross value of rabi jowar and cotton is 82 per cent of that for wheat and maize in U. P. If, however, instead of two competing crops, three were taken in the case of Maharashtra (since there is a 18-month crop of sugarcane in that state) then the revised ratio would be 157. The revised ratios are shown within brackets.

The ratios may be presented in the following mathematical form. Let $S_1$ be the per acre gross value of sugarcane in Maharashtra and $S_2$ the per acre gross value of sugarcane in U. P. Then, the ratio of per acre gross value of sugarcane between Maharashtra and U. P. is $\frac{S_1}{S_2}$. Let $C_1$ be the per acre gross value of competing crops in Maharashtra and $C_2$ in U.P. Then, the ratio of per acre gross value of competing crops as between Maharashtra and U.P. is $\frac{C_1}{C_2}$.

In the table $\frac{S_1}{S_2} \times 100 = 229$ and $\frac{C_1}{C_2} \times 100 = 82$.

Therefore, $\frac{229}{82}$ would be equal to $\frac{S_1C_2}{S_2C_1}$

## TABLE IV.1—*Percentage Ratios of per acre Gross Value of Sugarcane to that of Competing Crops between States*, 1960—63

| state | Bihar | Punjab | Maharashtra | Mysore | Madras | Andhra Pradesh | Madhya Pradesh | Gujarat | Rajasthan | West Bengal | Assam | Orissa |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) |
| Uttar Pradesh . | 102 | 111 | 229 | 255 | 230 | 199 | 91 | 176 | 94 | 169 | 163 | 102 |
| | 134 | 146 | 82 (157) | 271 | 292 | 254 | 92 | 103 | 137 | 286 | 335 | 221 |
| Bihar . | | 109 | 223 | 249 | 225 | 195 | 89 | 172 | 92 | 165 | 159 | 100 |
| | | 109 | 61 (116) | 203 | 219 | 191 | 69 | 77 | 103 | 215 | 251 | 165 |
| Punjab . . | | | 206 | 230 | 207 | 179 | 82 | 158 | 85 | 152 | 147 | 92 |
| | | | 56 (107) | 186 | 200 | 174 | 63 | 70 | 94 | 196 | 230 | 151 |
| Maharashtra . | | | | 112 | 101 | 87 | 40 | 74 | 41 | 74 | 71 | 45 |
| | | | | 331 (175) | 356 (188) | 310 (164) | 113 (59) | 127 (66) | 168 (88) | 349 (184) | 409 (216) | 269 (142) |
| Mysore . | | | | | 90 | 78 | 36 | 69 | 37 | 66 | 64 | 40 |
| | | | | | 108 | 94 | 34 | 38 | 51 | 105 | 124 | 81 |
| Madras . . | | | | | | 87 | 39 | 77 | 41 | 74 | 71 | 44 |
| | | | | | | 87 | 32 | 35 | 47 | 98 | 115 | 76 |
| Andhra Pradesh . | | | | | | | 44 | 88 | 47 | 85 | 82 | 51 |
| | | | | | | | 36 | 40 | 54 | 113 | 134 | 86 |

TABLE IV.1—*Percentage Ratios of per acre Gross Value of Sugarcane to that of Competing Crops between States,* 1960—63—contd.

| state | Bihar | Punjab | Maharashtra | Mysore | Madras | Andhra Pradesh | Madhya Pradesh | Gujarat | Rajasthan | West Bengal | Assam | Orissa |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) |
| Madhya Pradesh | | | | | | | | $\frac{194}{111}$ | $\frac{104}{149}$ | $\frac{187}{310}$ | $\frac{180}{363}$ | $\frac{112}{239}$ |
| Gujarat . . | | | | | | | | | $\frac{54}{133}$ | $\frac{96}{278}$ | $\frac{92}{326}$ | $\frac{58}{215}$ |
| Rajasthan . . | | | | | | | | | | $\frac{179}{209}$ | $\frac{173}{244}$ | $\frac{108}{161}$ |
| West Bengal . | | | | | | | | | | | $\frac{96}{117}$ | $\frac{60}{77}$ |
| Assam . . | | | | | | | | | | | | $\frac{63}{66}$ |

Figures in brackets indicate the ratios of per acre gross value of competing crops as between two states, taking three crops in respect of Maharashtra.

case of Bihar, Uttar Pradesh and Punjab and the lowest for Madras. On the basis of this indicator, Maharashtra appears to have a comparative advantage over the other states in the cultivation of sugarcane. On the other hand, Punjab and Rajasthan seem to have a comparative advantage in growing competing crops relatively to other important sugarcane producing states.

### (b) *Comparison of ratios of net returns (farm business income) per acre of sugarcane as between two regions and those of competing crops between the same regions*

The data on ratios of farm business income are presented in the following table. These data are available only for five states for which farm management studies have been organised by the Directorate of Economics and Statistics, Ministry of Food and Agriculture.

TABLE IV.2—*Percentage Ratios of Comparative Farm Business Income*

| state<br>(1) | Bihar<br>(2) | Punjab<br>(3) | Mysore<br>(4) | Andhra Pradesh<br>(5) |
|---|---|---|---|---|
| Uttar Pradesh . . . . . | $\frac{119}{127}$ | $\frac{107}{210}$ | $\frac{338}{407}$ | $\frac{183}{207}$ |
| Bihar . . . . . |  | $\frac{90}{166}$ | $\frac{285}{321}$ | $\frac{154}{164}$ |
| Punjab . . . . . |  |  | $\frac{316}{194}$ | $\frac{171}{99}$ |
| Mysore . . . . . |  |  |  | $\frac{54}{51}$ |

सत्यमेव जयते

On the basis of this indicator, Uttar Pradesh enjoys a comparative advantage in cultivation of sugarcane over the other four states. Bihar seems to enjoy a comparative advantage over Mysore, Andhra Pradesh and Punjab but not over Uttar Pradesh. Punjab seems to possess a comparative advantage in growing competing crops *vis-a-vis* sugarcane relatively to other states. The above inferences are corroborated by the available data regarding comparative ratios of net returns (from sugarcane and competing crops) as between these states. Thus, the advantages accruing to certain States which are best suited agro-climatically for sugarcane cultivation get reduced because these states simultaneously enjoy comparatively larger farm business income or net returns per acre from the competing crops.

### (c) *Comparison of output per rupee of input*

This analysis also is restricted to the five states for which farm management data are available and has been attempted on the basis of total costs as well as cash and kind expenses. The following table presents the results on the basis of cash and kind expenses only.

TABLE IV.3—*Value of Output of Sugarcane and Competing Crops per Rupee of Input*

| state | output per rupee of input | | |
|---|---|---|---|
| | sugarcane (Rs.) | competing crops (Rs.) | col. 3 as % of col. 2 |
| (1) | (2) | (3) | (4) |
| Uttar Pradesh | 3·2 | 1·5 | 50 |
| Punjab | 3·6 | 3·1 | 86 |
| Bihar : | | | |
| North Monghyr | 3·9 | 1·5 | 38 |
| Central Monghyr | | 2·0 | 51 |
| Mysore | 3·6 | 3·5 | 97 |
| Andhra Pradesh | 3·2 | 2·2 | 69 |

On the basis of this indicator, Uttar Pradesh and Bihar seem to have comparative advantage over Andhra Pradesh, Mysore and Punjab in the production of sugarcane.

2.3. The states were requested to furnish to the Commission details of districts which, in their opinion, were suitable for the extension of sugarcane cultivation in future. On the basis of this information and the indicators mentioned in paragraph 2.2, a study of the potentialities of the districts in different states for sugarcane cultivation has been attempted. This study may have to be supplemented and conclusions revised, wherever necessary, in the future, in the light of information relating particularly to such changes, as extension of irrigation and other technological developments. This study, which is tentative and illustrative, indicates that the following districts in Andhra Pradesh, Bihar, Madras, Mysore, Maharashtra and Uttar Pradesh enjoy a comparative advantage in sugarcane cultivation over other districts in the same states. Selection of these districts has been made on the following basis: (i) area, (ii) average yields per acre, and (iii) per acre gross values of sugarcane and two important competing crops.

| states | districts |
|---|---|
| Andhra Pradesh | East Godavari, West Godavari, Visakhapatnam, Nizamabad, Kurnool, Cuddapah, Chittoor, Medak and Srikakulam. |
| Bihar | Champaran, Saran, Darbhanga and Muzaffarpur. |
| Madras | Tiruchirapalli, North Arcot and Coimbatore. |
| Mysore | Bidar, Raichur, Bellary, Kolar and Bangalore. |
| Maharashtra | Ahmednagar, Sholapur, Kolhapur, Sangli, Aurangabad and Parbhani. |
| Uttar Pradesh | Lakhimpur Kheri, Saharanpur, Bijnor, Sitapur, Bareilly, Basti, Pilibhit, Nainital, Bahraich, Deoria, Gorakhpur and Dehradun. |

## 3. *Potential*

3.1. From the above analysis, the broad conclusions that emerge are as follows:

(i) Maharashtra seems to possess a comparative advantage in the cultivation of sugarcane over other sugarcane producing states;

(ii) Amongst the states considered, Punjab, Rajasthan and Madhya Pradesh, on the one hand, and West Bengal, Assam and Orissa, on the other, do not, at present, appear to be well-placed for a large-scale extension of sugarcane cultivation. In this group, Punjab suffers from several handicaps, like low per acre yield of sugarcane, low sugar recovery, water logging and frost;

(iii) Madras, Andhra Pradesh and Mysore have the advantage of higher per acre gross value of sugarcane than Uttar Pradesh and Bihar. On the other hand, the latter states possess a a comparative advantage over the former when one considers farm business income or net returns from sugarcane and its competing crops. On balance of considerations, it appears that all these five states—two in the sub-tropical belt and three in the tropical belt—are more or less similarly placed so far as the scope for the development of sugarcane cultivation is concerned;

(iv) Even within the regions where there is greater scope for the development of sugarcane cultivation, there are some districts which need to be given special attention for sugarcane development.

3.2. These broad inferences may be viewed in the light of two other considerations. These are: (i) development potential of the areas through larger application of water and fertilizer; and (ii) economic and social development of backward areas. In the sub-tropical belt, the current rate of application of water and fertilizer is grossly inadequate. The number of irrigations given and the amount of fertilizer put in per acre of land are appreciably less than those in Maharashtra and Madras. Further, it has been found by research stations located in the sub-tropical belt that, with adequate application of inputs and proper care, the yield per acre can be almost doubled in this belt. It is also possible by propagating suitable varieties to increase to some extent the level of sugar recovery in these areas. It is, therefore, very important that development programmes for sugarcane cultivation are intensified in Uttar Pradesh and Bihar. Further the eastern region of Uttar Pradesh and the northern region of Bihar are economically backward. Sugarcane happens to be the main cash crop in these areas and being a hardy crop provides security of income to the agriculturists in the event of failure of other crops due to frequent natural hazards. Further, these areas do not enjoy the advantage of having mineral resources or other raw materials for setting up large-scale industries.

## 4. *State Policy*

4.1. State intervention and support have played a significant role in promoting sugarcane cultivation in the tropical belt. In the first place, the sugar factories in this belt were not subjected, for a number of years initially, to fixation of either sugar prices or minimum sugarcane price, in contrast to the situation in the sub-tropical belt. Second, the considerable freight advantage which the sugar factories in the tropical belt were allowed in the fixation of sugar prices continued the advantage they had enjoyed when this belt was obtaining sugar from the sub-tropical belt. This enabled promoters to set up new factories or expand the capacity of the existing ones. The states in the tropical belt did not also levy cess on purchase of sugarcane by the factories. Finally, the accepted policy of Government of encouraging co-operative movement was translated into effective action by the states in the tropical belt and this helped, in a considerable measure, the growth of co-operative sugar factories in this part of the country.

4.2. In addition to the above concessions, the states in the tropical belt have actively promoted measures for the development of sugarcane. The provision of water, supply of fertilizers, construction of roads, and translation of research findings into cultivators' practices, etc., have been attended to more purposefully in these states. On the other hand, the Commission has observed that the administrative arrangements, at the state and regional levels for development work, are not satisfactory in Bihar and Uttar Pradesh. For instance, in Bihar, the development work and the administration of Cane Control Acts are bifurcated under two separate departments. In Uttar Pradesh, the requisite co-ordination for cane development work has yet to be brought about. Although the functions of the Cane Co-operative Unions in this state include both marketing and development, so far their main attention has been concentrated on marketing; development work has been neglected. With the setting up of these Unions, the factories have tended to take less direct interest in cane development work. The position has not appreciably improved even after the establishment of the Development Council for each factory. There is also lack of sufficient rapport between the Government departments and the private sector, which is the predominant sector in sugar industry in Uttar Pradesh and Bihar.

4.3. The purpose of making the above appraisal is to emphasise the role that the states can and should play in the development of sugar industry. Given a suitable policy and its proper execution upto the field level, Uttar Pradesh and Bihar should be able to achieve substantial results in their programmes of sugarcane development and, in turn, the development of this agriculture-based industry. It is encouraging to note that the Government of Bihar had recently set up a Committee which in its report made a number of constructive proposals for improving the productivity of sugarcane cultivation and sugar manufacture in that state.

# CHAPTER V

# GUR AND KHANDSARI

The manufacture of gur and khandsari occupies a very important place in the rural economy of the country. While the manufacture of gur is undertaken in almost all the sugarcane-producing states, it is largely concentrated in Uttar Pradesh and Punjab in the sub-tropical belt and Maharashtra and Andhra Pradesh in the tropical belt. The khandsari industry, is, however, mainly located in Uttar Pradesh though, lately, it has also spread to Punjab, Maharashtra and Andhra Pradesh. A large part of the production of gur is utilised for domestic consumption and the balance for commercial sale, which brings additional income to the sugarcane growers. The production of gur is concentrated in those areas where generally the climate is comparatively dry and the rainfall is not heavy. Even in these areas, the production is restricted to a period from the beginning of November to the beginning of March, the best period being January-February. Gur produced during these two months has a better keeping quality.

1.2. Normally, about five-eighths of the production of sugarcane in the country goes to the manufacture of gur and khandsari. The present average annual production of gur and khandsari is around 60 to 65 lakh tonnes, depending primarily on the size of the sugarcane crop and the comparative gain the grower derives by delivering his produce to the sugar factory *vis-a-vis* converting it into gur or by selling it to khandsari manufacturer. Apart from the size of the sugarcane crop, the availability of sugar to the consumers at a reasonable price and the changing pattern of people's taste also influence the production of these commodities. There has been increase of about 29 per cent in the all-India production of gur and khandsari during the period 1956-57 to 1963-64, most of which is due to a significant increase in production in the tropical belt. The share of the sub-tropical belt in the production of gur and khandsari has declined from a little over 70 per cent in 1956-57 to about 60 per cent in 1963-64.

1.3. Since the industry belongs to the un-organised sector, accurate statistics of production, both on an all-India basis and statewise, are not available. However, some estimates of production of these commodities have been framed on the basis of information regarding quantities of sugarcane utilised for gur and khandsari manufacture. The following table shows the trend in the all-India production of gur and khandsari for the period 1956-57 to 1963-64:

TABLE V.1—*Estimated Production of Gur and Khandsari*

(lakh tonnes)

| year<br>(1) | gur<br>(2) | khandsari<br>(3) |
|---|---|---|
| 1956-57 | 49·2 | 1·8 |
| 1957-58 | 50·7 | 2·3 |

TABLE V.1—*Estimated Production of Gur and Khandsari*—contd.

(lakh tonnes)

| (1) | (2) | (3) |
|---|---|---|
| 1958-59 | 52·8 | 2·5 |
| 1959-60 | 50·7 | 3·6 |
| 1960-61 | 62·2 | 3·1 |
| 1961-62 | 59·6 | 3·1 |
| 1962-63 | 58·6 | 2·9 |
| 1963-64 (provisional) | 62·9 | 2·9 |

1.4. Almost the entire production of gur is consumed within the country, mainly in the rural areas. Small quantities of gur are exported to the neighbouring countries, such as, Afghanistan, Ceylon, Malaysia, Singapore, etc. The average value of annual exports during the triennium ending 1963-64 was Rs. 13·87 lakhs. Uttar Pradesh, the main producer of gur and khandsari in the country, is the biggest consumer of these commodities. Considerable variation is observed in the per capita consumption of gur from state to state. The per capita consumption of gur for the country as a whole has, unlike sugar, not shown an upward trend.

## 2. *Gur*

2.1. The process of manufacture of gur is broadly divided into three stages, namely (i) extraction, (ii) clarification, and (iii) concentration of juice. Juice is extracted from sugarcane by either bullock-driven crushers or power-crushers of varying designs, sizes and capacities, the former being predominant because of their comparative cheapness. Power-crushers are generally used by large-scale manufacturers. The use of inefficient crushers, both bullock-driven and power-driven, gives a low recovery and results in heavy loss of sweetening material to the country.* The juice obtained from crushing the cane is clarified with the aid of clarificants of both vegetable and chemical origin. The clarified juice is then concentrated into a thick almost semi-liquid, mass by the process of boiling and evaporation. This semi-liquid mass, when cooled, solidifies into gur. On an average, the recovery of gur from juice is about 16 to 18 per cent and that from cane (assuming the recovery of juice from cane at 60 per cent) is of the order of 9·6 to 10·8 per cent. Gur of varying qualities is produced in the country. The more important ones are: (i) *Pansera* and *Chakku* in Uttar Pradesh, (ii) *Chakki* in Bihar, (iii) *Kolhapur* in Maharashtra, and (iv) *Anakapalli* I and II in Andhra Pradesh.

2.2. Gur is not only a sweetening agent but also an article of food for a very large population in all parts of the country. It is generally believed that gur has a greater sweetening quality than sugar and also gives more energy. Gur contains protein, fat, calcium and phosphorus which are essential nutrients for the body. It has also higher iron and copper content than sugar and is a superior product from the point of view of vitamin content. Thus, on the whole, it is claimed that gur has better nutritive value than sugar.

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*Extraction of juice from cane by bullock-driven kolhus is generally 45 to 50 per cent, by ordinary power-crushers 55 to 60 per cent, improved (6 Rollers) power-crushers 65 per cent and by sugar factories 75 to 80 per cent.

2.3. Cost of production of gur varies from state to state depending on local conditions. The main constituents of the cost of production are: price of sugarcane, labour charges (human and bullock), cost of clarificants, rental for crushers, and depreciation and maintenance charges on furnace and other implements. In the case of production of gur for domestic use, however, the only outlay by the farmer is on rental charges for crushers and wages for hired labour, if any.

2.4. According to the Khadi and Village Industries Commission, the average cost of production of one quintal of gur, under conditions generally prevailing in Uttar Pradesh, is about Rs. 64 based on the price of sugarcane of Rs. 5.30 per quintal. The estimated cost of production of gur in Maharashtra and Andhra Pradesh, according to the same source, is about Rs. 59 per quintal. On the other hand, the cost of production in Madras, Mysore and Punjab is about Rs. 75 per quintal. The same Commission has also worked out the comparative economics of production of gur and sugar, mainly on the basis of current conditions prevailing in Uttar Pradesh. The cost of production per quintal at the producer's end is about Rs. 62 for gur manufactured by bullock-driven crushers, Rs. 64 by power-driven crushers and Rs. 109 for sugar. The processing expenses for the manufacture of one quintal of gur are Rs. 14 in the case of bullock-driven crushers and Rs. 11 in the case of power-crushers while those for sugar are about Rs. 25. Further, the employment potential per unit of capital is substantially higher and the capital-output ratio significantly lower in the case of gur than sugar.

### 3. *Khandsari*

3.1. *Rab* is the basic raw material for manufacturing khandsari. The manufacturing operations involve two stages, namely, production of *rab* and manufacture of khandsari therefrom. Broadly, there are three processes of khandsari manufacture, *viz.,* (i) *Bel* system prevailing in Rohilkhand division of Uttar Pradesh; (ii) crushers mostly prevalent in Meerut, Muzaffarnagar, Bijnor and Shahjahanpur districts; and (iii) sulphitation process. The old system of producing khandsari is now being replaced by the modern system of using power-crushers and centrifugal machines. Small khandsari units either buy cane from growers and produce *rab* or buy *rab* from the farmers and then recover sugar by centrifuging the *rab*. It is pertinent to note that, unlike the molasses produced in sugar factories, molasses produced by the ordinary (or non-sulphitation) khandsaris is edible and is used in domestic consumption by the poorer class of people in rural areas. On an average, the recovery of khandsari sugar from cane varies between 4·5 and 7·5 per cent. In comparing the production of sweetening agents by vacuum pan factory and khandsari unit, non-edible molasses produced by the former has to be excluded while edible molasses produced by the latter has to be added. The total recovery of khandsari Ist sugar and edible molasses is generally more than 10 per cent and this compares favourably with the average recovery of sugar (excluding non-edible molasses) by the vacuum pan process.

3.2. After the year 1956-57, the production of khandsari increased significantly. This has been largely due to the almost doubling of the rate of excise duty on sugar in May, 1957. The khandsari industry is subject to an excise duty which is substantially lower than that on sugar. As many as 114 khandsari units, using the sulphitation process of clarification, are reported to have been established in recent years, the bulk of which have been set up in Uttar Pradesh. The molasses produced by these sulphitation khandsari units being inedible, their total recovery of sugar compares unfavourably with that of the vacuum pan factories.

3.3. According to the Khadi and Village Industries Commission, the cost of production of khandsari per quintal, based on the price of sugarcane of Rs. 5·30 at the producer's end, is about Rs. 127. The processing charges are about Rs. 16 per quintal. The capital-output ratio is lower than for sugar but higher than for gur. One of the main reasons for the stagnant level of production in the khandsari industry is understood to be its high cost of production. The other reasons may be the limited local demand for this product.

### 4. *Problem of Diversion*

4.1. Normally, supply of sugarcane to sugar factories in a season is ordinarily determined by the size of the cane crop and the price of cane payable by factories as compared to the prevailing market prices of gur and khandsari. The sugar factories do not ordinarily face much difficulty in the supply of cane. However, if a year of short crop is also associated with a year of control on sugar, there is a tendency for sugarcane to be diverted from sugar factories to the manufacture of gur and khandsari. While prices of sugar and prices of sugarcane delivered to factories are regulated by Government, those of gur and khandsari are generally free. When the prices of gur and khandsari rise, the manufacturers of these products are in a position to offer better prices for cane. This leads to a diversion of cane supplies away from sugar factories to gur and khandsari. The problem of diversion is, however, mainly confined to sugar factory areas. It has, however, to be recognised that gur provides an alternative market to the sugarcane growers in factory areas in a year when the entire production of sugarcane cannot be crushed by the factories.

4.2. The manufacture of gur and khandsari provides a bargaining counter for the cultivator in the sugar factory areas and the only means for the disposal of his sugarcane in the non-factory areas. Further, these products provide the people with a food of their choice which is both cheap and nutritious. A long-term policy for the stabilisation of the sugar industry should also keep in view the importance of this cottage industry.

4.3. A number of measures have been suggested to the Commission for ensuring uninterrupted supply of the required quantities of cane to sugar factories. The more important of these are listed below:

(i) controlling the distribution of all the three sweetening materials, sugar, gur and khandsari, in a related manner;

(ii) regulating the supply of sugarcane to sugar, gur and khandsari in an integrated manner;

(iii) following a common production and distribution programmes for sugar, gur and khandsari;

(iv) licensing of khandsari units and power-crushers and not permitting them to operate in reserved areas of sugar factories;

(v) bringing khandsari units and power-crushers under the Sugar Control Order;

(vi) controlling production of gur in reserved areas;

(vii) fixing maximum prices of gur and khandsari; and

(viii) levying appropriate excise duties (compounded) on gur and khandsari with a view to preventing their manufacturers from paying an unduly high price for sugarcane.

4.4. Apart from the above, it has been represented to the Commission that the production of gur and khandsari in the sugar factory areas should be completely banned and it should be gradually reduced in the non-factory areas. It has been observed that it would be in the national interest to utilise a larger proportion of the overall production of sugarcane for the manufacture of sugar which, in turn, would involve substantial increase of the existing capacity of the sugar industry. On the other hand, it has been urged that the existing capacity of the sugar industry should not be increased and instead, all efforts should be directed towards the expansion and improvement of gur and khandsari industry. It has been stated that such a step would lead to greater social and economic betterment of a large segment of the rural population.

## 5. *Recommendations*

5.1. The Commission, after giving due consideration to the divergent views expressed above, feels that both these industries have distinct places of their own in the sugarcane economy of the country. While, therefore, favouring appropriate measures for minimising the diversion of cane supplies away from sugar factories in the factory areas, the Commission also emphasises the importance of taking steps for the inprovement and stabilisation of gur and khandsari industry.

5.2. The Commission recommends that the following measures should be taken to deal with the problem of diversion of cane in the factory areas:

(i) Re-delimitation of reserved areas so as to

  (a) make them compact, and

  (b) either exclude existing khandsari units and power-crushers completely from reserved areas; or provide adequate cane supply both for the sugar factory concerned and such khandsari units or power-crushers as already exist in the reserved areas;

(ii) Licensing of all the existing khandsari and power-crusher units and banning of new units in reserved areas of sugar factories, or within the radius of 15 to 20 kilometres of a sugar factory;

(iii) Shifting of all the existing khandsari and power-crusher units from the Intensive Development Blocks;

(iv) Imposing excise duty or some other suitable levy (if necessary, on a compounded basis) on khandsari unit and power-crushers (and, if possible, 'kolhus' above a certain size) upto such a level that their ability to pay a price for sugarcane higher than that fixed by Government for sugar factories is restricted; and

(v) Enforcing the existing procedure for regulating the supply of sugarcane grown in reserve areas to sugar factories through Co-operative Cane Unions, where they exist, also in the case of cane supplies to khandsari units and power-crushers. Once the cane supplies to the khandsari units and power-crushers are regulated, it would be possible to get a fair idea of the volume of their production and, if necessary, also to control their production and prices.

5.3. As regards the question whether maximum prices should be fixed for gur and khandsari, the Commission feels that although there is a case for the fixation and enforcement of such prices for both, it would involve considerable administrative and other difficulties in practice. If the measures suggested in the preceding para regarding certain types of control on the production of gur and khandsari are strictly adhered to, it may not be necessary to take resort to the fixation of maximum prices for gur and khandsari. In the situation when the sugar prices are decontrolled, the prices of sugar, gur and khandsari would find their appropriate levels. Even then, it would be desirable to continue the restrictions on the production of khandsari in the sugar factory areas.

5.4. The Commission considers that sugar, gur and khandsari are eminently suitable for being dealt with from the approach of "common production programme" which has been accepted by Government for certain other industries. Since gur and khandsari will continue to be produced freely in three-fourths of the area under sugarcane and most of the restrictions mentioned in paragraph 5.2 will apply primarily in the areas reserved for sugar factories, they should not be treated as detrimental to the interests of village and small-scale industries, but as instruments for balanced growth of both small-scale and large-scale industries as essential parts of a common programme.

5.5. The Commission has considered the question of imposing a ban on inter-state movement of gur and khandsari. Apart from a number of undesirable effects of such a ban, gur being an item of consumption for the low income group, the Commission feels that it is not generally desirable to ban its movement from surplus areas. In this context, the Commission has also considered the question of allowing forward trading in gur. The production and prices of gur are generally subject to wide fluctuations giving rise to hardships both to producers and consumers. Since gur has a poor keeping quality, it may be difficult to control these fluctuations through a buffer stock policy for gur. However, if the buffer stock policy for sugar, which has been recommended elsewhere in the report, is operated upon keeping in view not only sugar prices but also gur prices, it should help indirectly stabilise gur prices also. If such buffer stock operations are supplemented by the development of a well-organised and properly regulated futures market in gur, under the supervision of the Forward Markets Commission, it may help to prevent undue fluctuations in gur prices.

5.6. In the past, there have been years of over-production of gur leading to a sharp decline in its price. One of the limiting factors in evening out supplies and stabilising prices has been the lack of proper storage facilities for this product. The Commission, therefore, recommends that Government should take measures to provide adequate and satisfactory warehousing facilities for the storage of gur, especially in those areas where gur is traded on a large scale.

5.7. It has been represented to the Commission that the sugar factories located in the Meerut and Muzaffarnagar districts of Uttar Pradesh should be allowed to manufacture gur in their factory establishments since these factories have been chronically suffering from shortage of adequate cane supplies. The Commission feels that such a permission will not be in accordance with the common production programme approach explained in paragraph 5.4 above. Moreover, one or a group of sugar factories in a certain part of the country cannot be allowed this concession to the exclusion of others. Such an arrangement would also lead to a loss of Government revenue from excise duty on sugar. The solution for the problem faced in these areas would be to undertake intensive programmes of sugarcane development so as to ensure adequate supply of sugarcane for both gur and sugar. In this context, the provision of tubewells and proper drainage facilities in these districts deserves special attention.

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# CHAPTER VI

# UTILISATION OF BY-PRODUCTS

The three major by-products of the sugar industry are (i) molasses, (ii) bagasse, and (iii) press mud. In addition, a large amount of cane trash is left in the fields after the harvesting of cane. The proportion of molasses to cane averages between 2·5 and 4·0 per cent and that of bagasse between 32 and 35 per cent. These by-products have several industrial and other uses.

## 2. *Molasses*

2.1. According to the Molasses Control Order, 1961, "Molasses" means the mother liquor produced in the final stage of manufacture of sugar by vacuum process from sugarcane or gur. It is a dark coloured viscous mass out of which further crystallisation or separation of syrup is not possible by ordinary means. It, however, still contains 30 to 35 per cent sucrose and 18 to 24 per cent "reducing sugar" (glucose and fructose), the total sugar content (in terms of reducing sugar) being 45 to 54 per cent.

2.2. While molasses produced as a by-product of white sugar through the sulphitation process is not edible and is used mainly by fermentation industries, molasses produced as by-product of raw sugar is edible and has a large market as cattle feed. An important use of the sulphitation molasses is in the manufacture of ethyl-alcohol. The annual consumption of ethyl-alcohol by the alcohol-based industries is expected to be 61 to 63 million gallons by 1965-66. The present level of investment in these industries is of the order of Rs. 50 crores and is expected to increase to Rs. 60 to 65 crores within the next few years.

2.3. About 45 per cent of molasses produced in the country is utilised by the distilleries. Molasses is used for tobacco curing, cattle feed, direct burning and in foundries. While some quantity is exported a considerable proportion, however, remains unutilised and gets wasted.

2.4. A target of production of 60 million gallons of alcohol with an installed capacity of 75·5 million gallons has been fixed under the Third Plan in order to meet the requirements of the alcohol-based industries. Due to shortage of storage capacity for molasses, both in distilleries and sugar factories, and lack of availability of tank wagons, there exists a large unutilised capacity in the distilleries.

2.5. According to the Directorate General of Technical Development, as much as 15 to 20 per cent of molasses produced by sugar factories is rendered unfit for direct use or for production of alcohol since a substantial proportion of the molasses produced is stored in open pits and becomes contaminated with dirt and water. For the best utilisation of this by-product, it is necessary that proper and adequate storage facilities in the shape of steel tanks are provided. The main difficulty in the installation of steel tanks for storage of molasses is stated to be the high cost involved. The sugar factories are not interested in making any investment on steel tanks due to the low price of molasses fixed by Government. The Commission has been informed that, instead, the factories are interested in the deterioration of molasses (by keeping it in the open exposed to the vagaries of weather) so that it is rendered unfit for distillation and they are permitted to dispose of the same in the open market. The open market price for molasses is reported to be several times more than the controlled price.

2.6. Sale, distribution and price of molasses are subject to the Molasses Control Order, 1961. The Order, *inter alia,* makes it obligatory on the part of sugar factories to provide for proper storage facilities for molasses. Three different grades of molasses and prices have been prescribed. They are as under:

| | |
|---|---|
| Grade 1 .. .. .. | 67 paise per 100 kg. |
| Grade 2 .. .. .. | 53 paise per 100 kg. |
| Grade 3 .. .. .. | 40 paise per 100 kg. |

2.7. A proposal for upward revision of the price of molasses was mooted to the Commission. The main arguments in favour of the proposal are: (a) that the current price of molasses is unremunerative and does not provide any incentive to sugar factories to build proper storage, and (b) that the open market price being several times more than the controlled price, there is a considerable temptation for evasion of the provisions of the Molasses Control Order. The main argument against the proposal is that an upward revision of the price will not appreciably reduce the price of sugar while it will increase the cost of production of alcohol and consequently that of alcohol-based products.

2.8. It has been represented to the Commission that molasses is not lifted by the distilleries promptly and the factories find it difficult to store it properly beyond the capacity available with them. The representatives of distilleries have, on the other hand, pointed out that the timely lifting of molasses is hampered by the fact that frequent changes are made by the Excise Commissioner in the allotment of factories for the supply of molasses to a distillery. The solution suggested is that each distillery should be assigned, on a long-term basis, a few sugar factories for the supply of requisite quantity of molasses. They have also represented against the present procedure of obtaining export permits for both molasses and alcohol. A clearance has to be obtained by the applicant for export permits from two officers, *i.e.*, the Molasses Controller in the state and the Chief Controller of Imports and Exports. It was represented that each officer insists on a prior clearance from the other before he can initiate any action in the matter with the result that the applicant for an export permit is unable to satisfy the requirements of both simultaneously.

2.9. With the setting up of a large number of refineries for petroleum products, there will be larger supply of naptha in a few years' time, and naptha will be increasingly used as raw material for the production of industrial alcohol. This may lead to a surplus of molasses in the country. It is, therefore, necessary to develop alternative uses for molasses. Two important uses would be: (a) cattle feed and (b) potable alcohol. The production of both would be encouraged if Government provides facilities for developing export markets for these products.

## 3. *Bagasse*

3.1. Bagasse is the other important by-product of the sugar industry. It is the fibrous product remaining after the cane is crushed. The industrial uses to which bagasse can be put are: (a) fuel, and (b) raw material for the manufacture of paper, pulp, newsprint and insulation boards. Bagasse can also be used, after treatment, for production of plastics, moulding powder, cattle feed, bio-gas, manure, etc.

3.2. Presently, bagasse is almost entirely used as fuel in the boilers. It is fed into boilers directly as it comes out of the mills and the sugar factory boiler furnaces are specially designed to suit this moist fuel. Most sugar factories, however, are not self-sufficient in bagasse in so far as their fuel requirements are concerned. They have to use extra fuel in the shape of fire-wood, coal or furnace oil. Efficient factories, on the other hand, not only do not use any extra fuel but save bagasse.

3.3. As there is considerable shortage of bamboo and *sabai* grass, keen interest has been evinced in recent years for the utilisation of bagasse for the production of paper and pulp on a much larger scale than hitherto. At present, five paper mills, with a total annual production capacity of 1,80,000 tonnes, are consuming about 83,000 tonnes of bagasse as raw material. In addition, eleven more paper mills, with a total annual production capacity of 2,89,000 tonnes, have been licensed with bagasse as raw material. It is estimated that, out of the targeted production of 105 lakh tonnes of paper, paper board and newsprint, only about 57 per cent would at present be achieved from the existing raw material resources. A quantity of 28·7 lakh tonnes of fresh bagasse, it is estimated, would be necessary to produce the balance of the target for paper, paper board and newsprint. It may not be difficult to divert the above quantity for this purpose out of a total production of about 100 lakh tonnes of bagasse at the end of the Fourth Plan.

3.4. There are two ways in which bagasse can be procured from the sugar factories: (i) by supplying substitute fuel in the shape of wood, coal or furnace oil to sugar factories and getting the entire bagasse released for the paper industry; and (ii) by making sugar factories more efficient in respect of fuel consumption and releasing the surplus bagasse. The major limiting factors, however, are: (i) lack of assured supply of alternate fuel at reasonable prices; (ii) conversion of existing boilers in the sugar factories; (iii) installation of de-pithing and baling equipment in the factories; (iv) non-availability of sufficient storage space; and (v) higher railway freight on bagasse as compared to that on bamboo.

## 4. *Press Mud*

4.1. During the course of clarification, most of the impurities of sugarcane juice get precipitated. The resultant product is called press mud or filter cake. The production of press mud, with about 60 per cent moisture, is around 3 per cent on cane in sulphitation factories and about 7 per cent in carbonation factories. Practically, all the sulphitation press mud is used as manure in the fields. The press mud obtained by carbonation process is used generally to fill up pits and, in some cases, for production of lime for building purposes. Attempts have been made to extract wax from the sulphitation filter cake. Cane wax can be used in place of imported *Carnauba* wax in the manufacture of carbon paper, shoe and other polishes, wax paper, emulsion for protective coating on fruits, etc. Efforts are being made to develop the industry for the manufacture of cane wax from sulphitation press mud.

4.2. Work is being done at the National Sugar Institute, Kanpur, for determining the chemical composition of cane wax and developing the method of refining and modifying crude wax. The most rational use of sulphitation press mud would be to extract wax from it and then use the former as manure. As regards carbonation press mud, the Central Building Research Institute has recently evolved a method of converting it into building lime according to the I.S.I. specifications. Attempts are being made to induce lime manufacturers operating in the neighbourhood of carbonation sugar factories to take to this method.

### 5. *Recommendations*

5.1. It is obvious that more attention should be paid to adequate and proper utilisation of by-products of the sugar industry. This is necessary to prevent national waste of scarce raw materials and also to improve the economy of sugar factories. The main difficulties in the proper utilisation of by-products, especially molasses, pertain to proper storage and transport of these raw materials from factories to the ultimate user industries.

5.2. The Commission recommends that the following steps should be taken by Government to provide incentive to sugar factories and distilleries for proper storage and utilisation of molasses:

(i) Sugar factories and distilleries should be required, if necessary as a statutory obligation, to build steel tanks of adequate capacity for proper storage of molasses and this should be rigidly enforced. Factories producing both raw and white sugar should store separately edible and inedible molasses;

(ii) The controlled price for molasses fixed by Government is very low and does not provide enough incentive to sugar factories to undertake adequate investment on steel tanks for proper storage of molasses. The price of molasses, therefore, should be raised by at least 50 per cent. The price of edible molasses should be fixed at somewhat higher level than that of inedible molasses;

(iii) Government should assign on a long-term basis a few sugar factories to each distillery for supply of molasses, keeping in view the convenience of transport. Since it would not be economical to set up a distillery in a small sugar factory and the cost of transporting molasses would be substantially higher than that for alcohol, it would be desirable for the distilleries and sugar factories to be in close proximity to one another; the distilleries and the linked sugar factories should work out an agreed programme of storage and supply of molasses;

(iv) Sugar factories, which are not located near any distillery or paper factory and are not large enough to set up distilleries or pulp plants of their own, should explore the possibility of manufacturing cattle feed based on edible molasses, bagasse and other ingredients, both for export and the domestic market;

(v) Government should provide facilities for developing the production of and export market for potable alcohol and cattle feed based on molasses;

(vi) The export policy, both for molasses and alcohol, should be determined on a long-term basis and export procedures simplified. The detailed recommendations in this regard have been given in Chapter XI.

सत्यमेव जयते

# CHAPTER VII

# RESEARCH AND DEVELOPMENT

## 1. *Existing Situation*

1.1. The efficiency of the sugar industry as also of sugarcane cultivation is dependent, to a considerable extent, upon the progress of research and the application of its results in these fields. Research on sugar is being done at the National Sugar Institute, Kanpur, while research on sugarcane is being carried out at two national institutes: the Sugarcane Breeding Institute, Coimbatore, and the Indian Institute of Sugarcane Research, Lucknow. The last two institutes have a few sub-stations located in Uttar Pradesh and Bihar. The main sugarcane-producing states also have their own sugarcane research stations. In Madras, some sugar factories too have small research stations.

1.2. The main objective of sugarcane research has been the evolution of suitable varieties of sugarcane which could be propagated in the early, mid and late periods of the sugarcane season, would be resistant to pests, diseases and natural hazards (*e.g.*, water-logging, frost and drought) and also would have high yield and high sucrose content. Research has also been carried out to determine the optimum irrigation, manurial and cultural practices for the crop with a view to improving the quality and per-acre yield of sugarcane. Research has been undertaken on testing and proper management of soils, control of major pests, diseases and weeds and preventing crop lodging. The findings suitable for different agro-climatic regions have been recommended to the cultivators for adoption. Yet, the average yield per acre of sugarcane as well as average sugar recovery for the country as a whole are about the lowest in the world:

TABLE VII.1—*Sugarcane: Per Acre Yield and Sugar Recovery in Important Sugar Producing Countries,* 1961-62

| country | yield per acre-cane (tonnes) | total sugar production (centri-fugal) (000 tonnes) | per-cent recovery | sugar per acre (tonnes) |
|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) |
| Hawaii | 80·4 | 991 | 11·4 | 9·17 |
| United Arab Republic (Egypt) | 39·2 | 327 | 10·9 | 4·27 |
| Br. Guiana† | 33·4 | 331 | 9·3 | 3·11 |
| Indonesia* | 30·7 | 627 | 11·2 | 3·44 |
| Puerto Rico | 29·7 | 1,007 | 10·4 | 3·09 |

†Relates to 1960-61.

*Relates to 1959-60.

TABLE VII.1—*contd.*

| (1 | (2) | (3) | (4) | (5) |
|---|---|---|---|---|
| Mauritius . . . . . | 25·3 | 553 | 11·2 | 2·83 |
| Australia . . . . . | 24·9 | 1,435 | 14·7 | 3·67 |
| United States of America‡ . . | 24·9 | 778 | 9·4 | 2·34 |
| Philippines . . . . . | 24·2 | 1,495 | 11·4 | 2·76 |
| India** . . . . . | 17·1 | 2,714 | 9·8 | 1·68 |
| Fiji . . . . . . | 18·1 | 153 | 13·1 | 2·37 |
| Brazil . . . . . . | 17·0 | 3,379 | 9·3 | 1·58 |
| Cuba* . . . . . . | 16·6 | 4,815 | 12·3 | 2·04 |
| Pakistan . . . . . . | 12·7 | 198 | N.A. | N.A. |

*Relates to 1959-60.

‡Mainland cane area.

**Information about India has been taken from data available with the Directorate of Economics & Statistics, Ministry of Food and Agriculture.

N.A.—Not available.

*Source* : The World Sugar Economy, Structure and Policies—National Sugar Economies and Policies (Vol. I), International Sugar Council (1963).

1.3. Within the country, however, there is a wide variation in per-acre yield of sugarcane and recovery of sugar therefrom as may be seen from the following table:

TABLE VII.2—*Sugarcane: Per Acre Yield and Sugar Recovery—1961-62 to 1963-64*

| state | yield per acre (tonnes) | | sugar recovery |
|---|---|---|---|
| | average for the State | maximum yield in development zones in the State | |
| (1) | (2) | (3) | (4) |
| Punjab . . . . . | 13·9 | 19·2 | 8·6 |
| Uttar Pradesh . . . | 14·9 | 17·8 | 9·5 |
| Bihar . . . . . | 13·3 | 20·6 | 9·6 |
| West Bengal . . . . . | 19·3 | 25·4 | 9·2 |
| Assam . . . . . | 15·5 | 21·2 | 9·1 |
| Orissa . . . . . | 17·2 | 30·1 | 8·4 |
| Madhya Pradesh . . . | 10·2 | 17·6 | 9·5 |
| Rajasthan . . . . . | 9·2 | .. | 9·0 |
| Gujarat . . . . . | 22·1 | 50·0 | 10·8 |
| Maharashtra . . . | 32·0 | 51·3 | 12·1 |
| Mysore . . . . . | 32·6 | 38·3 | 10·9 |
| Andhra Pradesh . . . | 31·4 | 35·3 | 10·0 |
| Madras . . . . . | 31·3 | 44·2 | 9·2 |
| Kerala . . . . . | 17·9 | 23·0 | 8·5 |

It may also be pointed out that the highest yields per acre obtained in cane crop competitions have been of the order of 153 tonnes in Andhra Pradesh (during 1958-59) and 147 from the 'Adsali' crop in Maharashtra (during 1959-60).

1.4. The main reason for the low average yield per acre and low average sugar recovery is the inadequacy of suitable sugarcane development programmes in different parts of the country, especially, in the sub-tropical belt. A large number of varieties have been evolved at research stations, but the propagation of such varieties on a commercial scale in the cultivators' fields has not been carried out adequately. The improved varieties introduced in the past in the sub-tropical belt did not normally last long due, *inter alia,* to the absence of 'clean cultivation'* which resulted in their falling prey to a number of pests and diseases. The cultivator, especially, in the eastern region of Uttar Pradesh and the northern region of Bihar, is very poor and, therefore, unable to undertake adequate investment for proper cultivation of sugarcane. The excessive fragmentation of small holdings, itself a cause of his poverty, is a further obstacle to the adoption of improved and clean methods of cultivation.

1.5. Sugarcane development envisages a series of measures which include development of seed nurseries, campaign against pests and diseases, extension of improved methods of cultivation such as distribution of improved seeds, improved manurial practices, supply of right type of fertilizers and improved implements and creation of adequate irrigation facilities. Further, construction of roads in factory areas, incentive for improvement through crop competitions and financial assistance in the form of loans and subsidies go a long way in promoting the acceptance and successful execution of various development programmes. A number of development schemes have been sanctioned and put into execution in different parts of the country. Apart from the development funds available with the State Governments, the Government of India also give financial assistance in the form of subsidies and grants to the states for development work. Achievements in the field of development and extension programmes in the country, though significant, have not been commensurate with the requirements in this respect.

1.6. Recently, schemes for intensive development (I.D. Block) for sugarcane have been launched in sugar factory areas of Uttar Pradesh, Bihar, Punjab, Maharashtra, Madras and Andhra Pradesh. These schemes have been taken up in Uttar Pradesh since 1962-63 and in other states thereafter. In Uttar Pradesh, under this scheme, an area of 4,000 acres around each factory has been earmarked for development work over a period of three years. The entire reserved areas of factories are proposed to be covered by this scheme in a phased manner over a certain period. In addition to these intensive schemes, pilot projects for sugarcane cultivation on the lines of the 'package' programme have been sanctioned for implementation in all the important sugarcane-growing states. This scheme has so far been started only in Punjab. The difference between the intensive scheme and the pilot project is, first, that in the latter, supply of improved seed, proper plant protection measures and maturity harvesting are stressed while the former includes all aspects of sugarcane development. Second, the share of financial assistance by the Government of India is different for these two schemes. For the intensive scheme, the total outlay is shared on an equal basis between the Government of India, State Government and the beneficiaries (including factories and cultivators) concerned while, for the pilot project, the Government of India gives a grant upto 50 per cent on account of the salaries of the staff engaged in this programme and also supplies full requirements of pesticides. In Uttar Pradesh, development councils have been constituted in each factory area with a view to improving the cultivation of sugarcane and undertaking the development of irrigation and other facilities.

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*Clean cultivation entails proper preparation of land, selection of disease-free seed, adequate weeding and hoeing of the plant at various stages of its growth and proper pest and disease control.

1.7. Alongside sugarcane development, it is also necessary to improve the techniques of sugar manufacture and devise ways of utilising the by-products so as to lower the cost of manufacture of sugar. The sugar industry in India is still largely dependent upon foreign countries for essential machinery parts, instruments and chemicals. Lack of competition in the industry seems to be mainly responsible for an inadequate appreciation by the industry of the need for research in these fields.

1.8. Technological research in sugar is being carried out at the National Sugar Institute, Kanpur and in a few other laboratories. The National Sugar Institute has achieved significant results both in basic and applied research. The applied research activities relate to efficiency of milling plants and boilers, different methods of cane juice clarification, storage of sugar, etc., and the basic research relates to physical and chemical aspects of sugar production. The Institute has also carried out research into the various ways of utilisation of by-products, such as, molasses, bagasse and press-mud. The Commission understands that the Institute has a large programme of research, both basic and applied, for the Fourth Plan period. This programme relates to efficiency of the diffusion process, improving the purity of cane juice, maximum extraction of sucrose content, fuel economy, efficiency of different kinds of equipment needed for clarification, pan boiling and curing and problems relating to analysis and control of properties of cane juice and economy in items which are, at present, imported. For the benefit of the industry, the Institute is maintaining a technical advisory service. There is need, however, for this service to be further strengthened.

1.9. The Commission has observed that the application of research findings by the industry is extremely inadequate. Though a few progressive industrialists have taken interest in the results of research, the general tendency is one of diffidence. The Commission feels that research institutes can initiate fruitful research projects on problems put forward by the industry. There should be a two-way traffic between the industry and the research laboratories. As in other progressive countries, the industry should take initiative in promoting research activities in this field.

1.10. A Development Council for the sugar industry, set up by the Government of India in 1954 under the Industries (Development and Regulation) Act, 1951, is also functioning. Various interests in the sugar industry, *viz.*, owners of sugar factories, trade, labour, technologists and experts having knowledge of the industry, are represented in the Council.

The functions of the Council, *inter alia,* include various aspects of development of the industry, standardisation and better marketing of products, training and research.

2. *Problems*

2.1. The main problems pertaining to sugarcane are the following: (i) preventing quick deterioration of varieties, especially, in the sub-tropical belt, and ensuring their replacement; (ii) evolution of early, mid and late varieties; (iii) making the factory areas more compact for intensifying development work; (iv) construction of roads and provision of adequate transport facilities, and (v) training of research workers.

2.2. The fact of quick deterioration of varieties in the sub-tropical belt and the problem of their replacement have been commented upon by representatives of sugar factories and various experts consulted by the Commission. The representatives of sugar factories have stated that most of the cane varieties sown in the sub-tropical belt have become disease-infested. They are of the view that work relating to trial and selection of varieties should be expedited and suitable varieties released for commercial cultivation promptly. They have suggested that breeding programmes alongwith testing and selection of varieties should be undertaken, if possible, in factory farms also. They have also urged that foreign cane varieties should be imported and tried in the fields. While admitting the fact of quick deterioration of varieties, especially, in the sub-tropical belt, the experts, consulted by the Commission, have observed that this was due to nutritional deficiency and consequent spread of diseases in varieties. The mal-nutrition of the plants has been the result of indifferent cultivation in the sub-tropical belt. Release of a large number of new varieties would, therefore, create confusion in seed distribution and make disease and pest control more difficult. Further, according to the experts, breeding work under north Indian conditions is difficult and the output of the Coimbatore Breeding Institute is more than enough to meet the needs of all the states. The experts have also cautioned against import of foreign varieties which have not given good results in this country. According to them, propagation of unapproved varieties should be statutorily banned.

2.3. It is well-known that the percentage recovery of sugar from a given variety of sugarcane follows the path of a unimodel curve, starting with a lower base at the beginning of the season, reaching the peak in the middle and again falling in the latter part of the season. In order to minimise the fall in percentage recovery of sugar during the different parts of the season, it has been suggested to the Commission that the factories should be ensured the supply of fully matured cane throughout the crushing season. The evolution of early, mid and late varieties has been suggested as a solution to this problem. The experts have stated that while this would enable the factories to have almost uniform recovery throughout the entire crushing season, it would also mean lower yield per acre, specially, from the early varieties. In this context, the issue whether varieties having high sugar content would be evolved in preference to those having high tonnage has also been commented upon by the experts. They are of the view that it will not be advisable to aim at maximising only the sugar content in cane excluding all other considerations. The criteria should be the out-turn of sugar per acre. According to some of them, high tonnage varieties are often more productive of sugar per acre than high sugar content varieties and also give better response to fertilizer, irrigation and culture and are less prone to pests and other damage.

2.4. The factory area, specially in the sub-tropical belt, being very large at present and cane being required to be transported from a distance of as much as 50 to 60 kilometres, the need for having proper road and transport facilities is great. It has been found that the time taken between the harvesting of cane and its crushing in the mills is, on an average, 2 to 3 days. In consequence, there is a greater driage and deterioration of cane than would be the case otherwise. One of the items of the development work which should have been undertaken by the cane cooperative union and the development council in each factory area relates to construction of roads. The Commission found in its tours that this has been often neglected by the development organisations. This is specially true in Uttar Pradesh and Bihar. The Commission has also been told that the greater single factor responsible for the low yield per acre over large tracts in the sub-tropical belt was the lack of adequate irrigation and drainage facilities and inadequate use of fertilizer. It has been represented to the Commission that training facilities should be provided to the extension staff so that scientific cultivation could be demonstrated to the farmers in their own fields.

2.5. The representatives of sugar factories have suggested that a development fund should be created partly by contributions from cane cess, partly by an increase of commission to cane co-operative unions, and partly by making specific provision for cane development in the calculation of sugar prices. This fund should be placed at the disposal of the development council of the factory.

### 3. *Recommendations*

3.1. The Commission accepts the statement made by experts that the quick deterioration in varieties is not necessarily due to their bad quality, but to either mal-nutrition of the cane or unclean practices of cultivation. The Commission, therefore, recommends that every effort should be made to ensure proper supply of the required amount of input factors and, at the same time, develop a proper extension agency for the purpose of ensuring healthy and clean cultivation. This would also necessitate proper testing of soil and the Commission recommends that soil testing laboratories should be set up and the testing done without any charge from the growers. In this connection, the Commission recommends that Sugarcane Liaison Farms (Zonal Centres) similar to the ones existing in Andhra Pradesh should be set up in other sugarcane-growing states also, since these farms have proved very useful in the field of collaboration between the state, industry, and research stations for tackling technical problems of local importance. The Liaison Farms in Andhra Pradesh serve as large-scale demonstration plots also.

3.2. It has been observed that areas, which are unfavourably placed so far as development of sugarcane cultivation is concerned, also suffer at present from lack of adequate irrigation and drainage facilities. The sugar factories located in these areas may have to continue since, due to social and other considerations, these factories cannot be shifted to some other favourable areas. While future development of the sugar industry may not be encouraged in these areas, the existing sugar factories should be assured of adequate cane supply. For instance, the sugar factory areas in Punjab and western Uttar Pradesh suffer from lack of adequate irrigation facilities and also water-logging. The Commission recommends that high priority should be given by these states to instal a sufficient number of tubewells in the factory areas which would ensure adequate supply of irrigation water and also minimise the adverse effects of water-logging.

3.3. The Commission recommends that the evolution of early, mid and late varieties suitable for different regions and their propagation with the help of appropriate incentives or disincentives should be expedited. Cultivation of these varieties would enable the farmer to get his land freed from cultivation of cane in the shortest possible time which, in turn, would enable him to undertake cultivation of a short crop. In consultation with the Sugarcane Breeding Institute, Coimbatore, and the State Governments, the Government of India should draw up a list of approved varieties for different states. This list should be reviewed from time to time. The cultivation of unapproved varieties should be discouraged by adopting control measures (*e.g.* rogueing) similar to those for cotton and also prescribing that the minimum price fixed for sugarcane would either not apply to those varieties or be subject to a sufficiently large discount, say, 20 per cent.

3.4. The reduction of the present size of the factory area, making it more compact, for the purpose of execution of development programme is urgently called for. It may be recalled that under the intensive sugarcane development schemes, an area of 4,000 acres around each factory is to be covered for development work. The scheme of payment of sugarcane price on quality basis has been suggested to the Commission and it has been discussed later in Chapter IX. Since, under the conditions obtaining at present in the sub-tropical belt, specially in Uttar Pradesh and Bihar, the introduction of this scheme would require the division of the factory area into sub-areas of suitable size and the grouping of farmers within such sub-areas, it is essential that the factory area is made more compact. The Commission is of the view that, pending the delimitation of the factory area, the development work should be intensified in the I.D. Blocks, and the propagation of unapproved varieties within such blocks should be statutorily banned. In the remaining part of the reserved area, the factory management should be given an opportunity to take up development work with financial assistance on a *pro-rata* basis out of the funds earmarked for that area. This would provide a healthy competition between the existing development agency and the factory management regarding development work. In this connection, the Commission would also like to recommend that construction of roads and provision of adequate transport facilities should be given very high priority in the development programmes of both the states and the factories. If the size of the factory area is made more compact, this could help in reducing expenditure that the State Government and the factory would be called upon to incur for providing these facilities.

3.5. The Commission recommends that courses of specialised training should be set up at the two national institutes at Lucknow and Coimbatore. These courses should be open to employees of State Governments and sugar factories and also to growers. Regarding financial assistance and provision of adequate grants for development work, the Commission has noted that the State Governments have been spending varying proportion of the revenue realised from purchase tax on sugarcane. The Commission is of the view that a significant proportion of the revenue realised from purchase tax on sugarcane should be earmarked for its development work. In this context, the Commission would like to emphasise that the industry should play a much more active role than hitherto. The Commission has observed that certain factories in the private sector in the tropical belt have undertaken active development programmes and thereby have reaped significant advantage in terms of efficiency, both of sugarcane cultivation and sugar manufacture. This has also helped in bringing the factory closer to the growers. Such examples should be multiplied, especially, by the industry in the sub-tropical belt. The growers, in their turn, also have some obligation in this context. It is quite pertinent for the industry to suggest that if the development programmes are undertaken by it, the growers should have a reciprocal obligation to supply to it the entire cane (except for their domestic consumption) produced in the development zone of each factory.

3.6. The Commission recommends that a small Standing Committee, including the Directors of the three national institutes and one representative each from Government, industry and the growers, should be constituted by the Government of India. The terms of reference of this Committee should be: (a) to discuss the progress of development in research activities during the year; (b) to decide which particular varieties be propagated; (c) to suggest measures required for such propagation; and (d) to examine any other matter connected with research and development programmes of sugarcane in the country. This Standing Committee will supplement the work of the Development Council for the Sugar Industry and will be engaged in specific problems of sugarcane research. The Commission would like to state in conclusion that perhaps for no other crop more intensive research recommendations are already available than for sugarcane. If only the existing recommendations could be widely adopted in cultivation of sugarcane, especially in the sub-tropical belt, the per acre yield of sugarcane would increase substantially.

सत्यमेव जयते

## PART III

# PRICE AND DISTRIBUTION POLICY

# CHAPTER VIII

## PERSPECTIVE FOR 1975-76

The demand for sugar has a high income elasticity upto a certain level of income. With the increase in population and per capita income in India, the consumption of sugar has increased from about 12 lakh tonnes at the beginning of the First Five Year Plan to about 23·4 lakh tonnes by 1963-64. In the absence of the present restrictions, the increase in consumption probably would have been higher by 3 to 4 lakh tonnes. Besides the consumption of sugar, that of gur and khandsari is also significant since as much as five-eighths of the total sugarcane output is utilised for their production. Further, India has lately entered the export market and the level of exports varies between 10 to 15 per cent of the total production of sugar in the country. In view of the great need for earning foreign exchange in the present context of development effort in the country, it is proposed to continue, and even to augment, the present level of exports. It is, therefore, necessary to work out the extent of demand for sugar both for internal consumption and export for the next ten years. Projections of production, demand and export for a fairly long period are subject to obvious limitations. Even then, it would be worthwhile to attempt such projections, say, for a limited period of ten years. In the following paragraphs, such an attempt has been made.

### 2. *Projection of Internal Demand*

2.1. The following table gives the per capita availability of sugar, gur and khandsari :

TABLE VIII.1—*Per capita Availability per Annum*

(kilograms)

| year | sugar | gur | khand-sari | total |
|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) |
| 1949-50 | 2·7 | 11·1 | 0·7 | 14·5 |
| 1950-51 | 3·0 | 12·8 | 0·5 | 16·3 |
| 1951-52 | 3·2 | 12·9 | 0·4 | 16·5 |
| 1952-53 | 4·5 | 10·5 | 0·3 | 15·3 |
| 1953-54 | 4·9 | 9·4 | 0·4 | 14·7 |
| 1954-55 | 4·5 | 11·0 | 0·6 | 16·1 |
| 1955-56 | 5·0 | 10·8 | 0·4 | 16·2 |
| 1956-57 | 5·0 | 12·2 | 0·5 | 17·7 |
| 1957-58 | 5·1 | 12·2 | 0·6 | 17·9 |
| 1958-59 | 5·0 | 12·3 | 0·6 | 17·9 |
| 1959-60 | 4·8 | 12·0 | 0·8 | 17·6 |
| 1960-61 | 4·8 | 14·1 | 0·7 | 19·6 |
| 1961-62 | 5·8 | 13·3 | 0·7 | 19·8 |
| 1962-63 | 5·4 | 12·7 | 0·6 | 18·7 |
| 1963-64 | 4·9 | 12·6 | 0·6 | 18·1 |

*Source* : Directorate of Economics & Statistics, Ministry of Food and Agriculture.

The *per capita* availability of sugar went up rapidly while that of gur and khandsari remained more or less stationary during the last fifteen years. It may be assumed that the same trend is likely to continue in the future. The additional demand for sugar is likely to be larger than that for gur and khandsari because of improvement in the economic conditions of the people and consequent rise in their standards of living, which will induce some shift from the consumption of gur and khandsari to that of sugar. It may be noted, however, that the *per capita* availability of gur and khandsari has been estimated to be slightly higher during the period 1960-61 to 1962-63 because of larger output of sugarcane during these years.

2.2. An attempt has been made to project *per capita* availability of gur and khandsari on the basis of data for fifteen years, *i.e.* 1949-50 to 1963-64. The *per capita* consumption of gur and khandsari at the end of the Fourth and Fifth Plan periods works to 14·16 and 14·91 kilograms for gur and 0·83 and 0·93 kilograms for khandsari respectively. However, the year 1960-61 was a year of bumper sugarcane production and there was also a cut of 10 per cent in the production of sugar. This led to a larger supply of sugarcane for production of gur and khandsari. Therefore, it was felt that the projections should be based on data for eleven years, *i.e.* 1949-50 to 1959-60. On this basis, the *per capita* consumption of gur and khandsari, at the end of the Fourth and Fifth Plan periods, works to 12·43 and 12·70 kilograms for gur and 0·80 and 0·89 kilograms for khandsari, respectively. Thus, the total requirements of gur and khandsari, at the end of the Fourth and Fifth Plan periods, may be estimated as follows*:

TABLE VIII.2—*Total Requirements of Gur and Khandsari*

(lakh tonnes)

| | 1970-71 | 1975-76 |
|---|---|---|
| gur | 69·6 | 80·0 |
| khandsari | 4·5 | 5·6 |

2.3. On the basis of (i) increase in population as estimated by the Registrar General of India; (ii) rate of increase of national income during the Fourth and Fifth Plan periods as given in the Third Plan Report; and (iii) income elasticity of demand for sugar at 1·79†, the requirements of sugar for domestic consumption in 1970-71 and 1975-76 work out to 37·6 and 53·5 lakh tonnes respectively.

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*Since income elasticities for gur and khandsari are not available separately, the alternative method of projection on the basis of fitting a linear trend to the time-series data has been adopted. The assumption of a constant income effect on consumption of gur and khandsari implicit in such a method is also a realistic one.

†The expenditure elasticity worked out on the basis of the tenth round of National Sample Survey has been used. The rural and urban elasticities have been combined to arrive at all-India elasticity. The weights are proportionate expenditures on sugar in rural and urban areas respectively. The all-India elasticity thus arrived at is 1 /9.

### 3. *Projection for Export*

3.1. Significant exports of sugar have started only from the year 1957 and the level of export in the last few years has fluctuated between 0·3 to 5·14 lakh tonnes, depending mainly upon internal availability of sugar in a particular year and the possibility of getting a higher or lower quota in the world preferential markets. After the stoppage of export of Cuban sugar to the U.S.A. and world free market, India was able to increase her export of sugar to these markets. These factors tend to vitiate any long-term projection that may be based on past trends.

3.2. Since the end of World War II, international trade in sugar has gone up marginally in relation to increase in demand for sugar, which itself had lagged behind world sugar output. This pattern of growth in world sugar trade, consumption and output is expected to continue in the next decade as well. The Food and Agriculture Organisation of the United Nations has observed :

> "An analysis of the current trends in the world sugar economy indicates that by 1970, the consumption outside the Sino-Soviet area will increase by 36 to 44 per cent. Production will rise by 45 to 50 per cent, and trade is likely to expand by 9 to 14 per cent."**

Thus, there is not much prospect for a significant rise in the international sugar price in the coming years. One of the reasons is the likelihood of the re-emergence of Cuba as a major seller in the world sugar market. Cuba has produced 6 million tonnes of sugar this year as against 3·8 million tonnes last year. Apart from excess supply conditions in the world market, the structure of the world trade has an important bearing on the course of sugar price in the free markets. It has been noticed that the prices in the free market are negatively correlated with those in the preferential markets. It is expected that by 1970-71 or later, the unloading of Cuban sugar on free markets may have adverse effects on sugar prices in these markets. Thus, a study of long-term factors operating in the international sugar market reveals that the uncertainties in the international sugar economy may continue during the next decade in the absence of international price stabilisation measures.

3.3. Even though the international sugar situation is beset with chronic instability, the main sugar exporting countries have continued the practice of selling as much as possible in the world preferential markets and the balance has been dumped in the free market at almost throwaway prices. Presumably, the prices that have been realised out of sales in the free market have been at least sufficient to cover the prime cost of production of sugar in these countries. India's share in the global exports of sugar varies from 2 to 4 per cent. Even if India is able to increase her share to a small extent it should mean a substantial increase in the absolute volume of her exports. If there was a choice for the country whether to produce sugarcane or rice from the same acre of land, on balance, it would be advantageous to grow sugarcane and export sugar manufactured therefrom and use the foreign exchange earned to import rice. The foreign exchange receipts from such export of sugar, even at current low prices in the international market, would be higher than the import cost of the equivalent

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**F.A.O. Agriculture Commodities Projections for 1970, pp.11-37.

quantity of rice as could be produced within the country from the same acre of land. However, there is an obvious limit to substitution of rice by sugarcane in view of the overall need for food self-sufficiency and the increasing competition from other sugar producing countries. Further, if India can export sugar to preferential markets at premium prices by securing regular and higher quotas, it may be possible to increase the exports and at the same time reduce losses substantially.

3.4. The following table gives exports of sugar from India during the past few years :

TABLE VIII.3—*Exports of Sugar*

| | free markets | | U.S. quota | |
|---|---|---|---|---|
| year | quantity exported (tonnes) | price Rs./tonne | quantity exported (tonnes) | price Rs/tonne |
| 1957 | 1,46,811 | 810 | | |
| 1958 | 48,821 | 507 | | |
| 1959 | 16,030 | 489 | | |
| 1960 | 17,793 | 454 | | |
| 1961 | 1,20,309 | 441 | 1,47,560 | 543 |
| 1962 | 2,45,677 | 356 | 1,27,576 | 472 |
| 1963 | 3,73,020 | 690* | 1,05,209 | 626* |
| 1964 | 1,34,868 | 879* | 99,431 | 727* |
| 1965** (upto June 30) | 30,908 | 260* | 70,920 | 575* |

The proportion of exports to the preferential markets to total exports has increased significantly during the last few years. Lately, India has been able to export sugar to a number of new markets such as Japan, South East Asia and Middle East countries. It, therefore, seems possible to explore new markets and also to increase the current level of exports to the traditional markets.

3.5. The Indian Sugar Mills Association has estimated that the level of exports by the end of the Fourth Plan may not be more than 5 lakh tonnes per annum. On the other hand, the U.S. Department of Agriculture has estimated that exports of sugar from India by 1970 would be around 9 lakh tonnes. There is a view that, in spite of various difficulties, India should attempt to increase her exports of sugar to 7·5 lakh tonnes by the end of the Fourth Plan. In order to achieve this target, it would be necessary, in the first place, to negotiate for as large a quota as possible for the preferential markets. Second, measures need to be taken for reducing the cost of production of sugar in India in order to improve her competitive position in the world market. Finally, the total licensed and installed capacity should be adequate for achieving the production target which would satisfy both the internal requirements and export needs. As mentioned earlier, the demand for sugar for internal requirements, at the end of the Forth Plan, is expected to be around 37·6 lakh tonnes. In order to export 7·5 lakh tonnes by 1970-71, the total installed capacity at the end of the Fourth Plan should be around 45 lakh tonnes. In view of the foregoing, the Commission recommends that the target for annual export of sugar should be set at 7·5 lakh tonnes by 1970-71 and 10·0 lakh tonnes by the end of 1975-76. In case, the actual exports turn out to be higher or lower, the buffer-stock recommended later in the report should provide some cushion and if, in the light of experience, that is not considered adequate, there could be adjustments in the licensing policy at the time of the mid-term appraisal of the Fourth and Fifth Plans.

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*Estimated.

**In addition, under Commonwealth Sugar Agreement, the quantity exported was 1,09,371 tonnes and the price per tonne Rs. 363.

*Source* : Directorate of Sugar & Vanaspati, Ministry of Food and Agriculture.

3.6. The aggregate demand for sugar, gur and khandsari in 1970-71 and 1975-76 will, thus, be as follows :

TABLE VIII.4—*Estimated Demand for Sugar, Gur and Khandsari in* 1970-71 *and* 1975-76

(lakh tonnes)

| item | 1970-71 | 1975-76 |
|---|---|---|
| sugar for domestic consumption . . . . . . . | 37·6 | 53·4 |
| sugar for exports . . . . . . . . . | 7·5 | 10·0 |
| | 45·1 | 63·4 |
| gur . . . . . . . . . . . | 69·6 | 80·0 |
| khandsari . . . . . . . . . . | 4·5 | 5·6 |
| | 119·2 | 149·0 |

3.7. After making an allowance for chewing, seed, etc., at the usual rate (12 per cent), the targets for production of sugarcane in 1970-71 and 1975-76 will be roughly about 134 and 169 million tonnes respectively.

सत्यमेव जयते

# CHAPTER IX

# PRICE POLICY FOR SUGAR AND SUGARCANE

## I

### *The Problem and Appraisal of Policy*

1.1. The outstanding feature of the Indian sugar economy during the last fifteen years has been its instability, showing itself in the large and recurring imbalances between the demand for and supply of sugar.

TABLE IX.1—*Surpluses or Deficits in Sugar Requirements*

(lakh tonnes)

| year (November to October) | production | consumption | surplus/deficit Col.(2)(—) Col.(3) | per cent increase in production over preceding year | per cent increase in consumption over preceding year | opening stocks as on 1st November** |
|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| 1949-50 . . | 9·95 | 9·55 | 0·40 | .. | .. | 0·51 |
| 1950-51 . . | 11·34 | 10·98 | 0·36 | 14·0 | 15·0 | 0·91 |
| 1951-52 . . | 15·20 | 11·82 | 3·38 | 34·0 | 7·7 | 1·84 |
| 1952-53 . . | 13·18 | 16·79 | (—)3·61 | (—)13 3 | 42·0 | 5·14 |
| 1953-54 . . | 10·30 | 18·36 | (—)8·06 | (—)21·9 | 9·4 | 2·06 |
| 1954-55 . . | 16·22 | 17·51 | (—)1·29 | 57·5 | (—)4·6 | 1·29 |
| 1955-56 . . | 18·90 | 19·72 | (—)0·82 | 16·5 | 12·6 | 5·74 |
| 1956-57 . . | 20·74 | 20·18 | 0·56 | 9·7 | 2·3 | 5·61 |
| 1957-58 . . | 20·09 | 20·75 | (—)0·66 | (—)3·1 | 2·8 | 4·70 |
| 1958-59 . . | 19·51 | 21·13 | (—)1·62 | (—)2·9 | 1·8 | 3·68 |
| 1959-60 . . | 24·82 | 20·53 | 4·29 | 27·2 | (—)2·8 | 1·76 |
| 1960-61 . . | 30·29 | 21·27 | 9·02 | 22·0 | 3·6 | 6·05 |
| 1961-62 . . | 27·14 | 25·87 | 1·27 | (—)10·4 | 21·6 | 12·60 |
| 1962-63 . . | 21·52 | 24·88 | (—)3·36 | (—)20·7 | (—)3·8 | 10·26 |
| 1963-64 . . | 25·69 | 23·36 | 2·33 | 19·4 | (—)6·1 | 1·76 |
| 1964-65 . . | *32·00 | *24·50 | *7·50 | 24·6 | 4·9 | 1·59 |

*Estimated.

**Opening stock includes also the adjustments for imports and exports.

*Source*: Directorate of Sugar & Vanaspati, Ministry of Food and Agriculture.

1.2. The foregoing table reveals that imbalances between production and consumption of sugar have ranged all the way from a deficit of 8 lakh tonnes in 1953-54 to a surplus of 9 lakh tonnes in 1960-61. Carry-over stocks have risen in one year by 6 lakh tonnes and fallen in another by 8·5 lakh tonnes and it has happened during the course of the last four years. Underlying these imbalances have been the large fluctuations in production as well as consumption of sugar. Fluctuations in production, however, have been on the whole more violent than those in consumption. Increases in production over the preceding year have been as high as 57 per cent in 1954-55 and 34 per cent in 1951-52 and decreases, on the same basis, as large as 22 per cent and 21 per cent in the years 1953-54 and 1962-63 respectively.

1.3. Emergence of acute shortages at one time and surpluses at another has led to an alternation of control and decontrol in the last 15 years. Indeed the phases of control and decontrol would perhaps have synchronised with those of shortages and surpluses in production, were it not for the fact that the shortages in the years 1953-54 and 1954-55 were alleviated by large imports of about 13 lakh tonnes of sugar in these two years.

1.4. More significant, however, is the fact that the alternating policies of control and decontrol could not eliminate these fluctuations which have been so chronic a feature of the sugar economy that they have persisted all through the periods of control and decontrol of sugar. In fact, although in an important sense these imbalances have been caused by the fluctuations in the size of the cane crop, they have often been aggravated by the policy measures that followed them.

1.5. The sharp fluctuations in sugar output have been, in the main, caused by two factors: (a) **fluctuations in the acreage** and yield of the sugarcane crop; and (b) diversion of cane supplies towards and away from the sugar factories. Variations in sugar production, as will be seen from the following table, are very similar to those in sugarcane acreage. Further, the small size of the cane crop has often been associated with the diversion of cane supplies away from the sugar factories and the large size of the cane crop with the opposite tendency, thus accentuating the fluctuations in sugar output that would have resulted from fluctuations in the size of the crop.

TABLE IX.2—*Index Numbers of Sugarcane Area and Sugar Production*

(base : 1949-50=100)

| year | sugarcane area | direction of change | sugar production | direction of change |
|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) |
| 1949-50 | 100·0 | | 100·0 | |
| 1950-51 | 116·4 | + | 114·0 | + |
| 1951-52 | 132·2 | + | 152·8 | + |
| 1952-53 | 117·8 | — | 132·5 | — |
| 1953-54 | 96·0 | — | 103·5 | — |
| 1954-55 | 109·6 | + | 163·0 | + |
| 1955-56 | 125·1 | + | 189·9 | + |
| 1956-57 | 138 9 | + | 208 4 | + |
| 1957-58 | 140·4 | + | 201·9 | — |
| 1958-59 | 132·0 | — | 196·1 | — |
| 1959-60 | 144·8 | + | 249·4 | + |
| 1960-61 | 163·6 | + | 304·4 | + |
| 1961-62 | 166·3 | + | 272·8 | — |
| 1962-63 | 154·5 | — | 216·3 | — |
| 1963-64 | 152·8 | — | 258·2 | + |
| 1964-65 | 172·3 | + | 321·6<br>(provisional) | + |

An important cause of the diversions has been the fluctuations in the relationship between unregulated gur and khandsari prices, on the one hand, and regulated sugar prices, on the other. Gur and khandsari prices, having been free, have reacted sharply and promptly to the size of the cane crop. unlike the cane prices fixed for the sugar factories. The sharp rise of gur/cane price ratio in a year of small crop has thus tended to divert cane supplies away from the sugar factories and a sharp decline in this ratio has tended to produce the reverse phenomenon.

1.6. Since sugar prices, when controlled, rest on cane prices, the rise of gur/cane price ratio accompanies a rise in gur/sugar price ratio. What causes thus a diversion of cane supplies away from sugar tends to cause a diversion of demand (from the consumers of gur and khandsari) towards sugar, thereby accentuating the sugar imbalances.

1.7. The complexity of the situation derives from the fact that, in gur and khandsari, sugar has two important rivals which compete with it both for the overall demand for sweetening materials as well as for the available cane supplies. Outstanding amongst the defects of the present system of control is its partial character in the sense that it applies to sugar but leaves gur and khandsari free. By controlling sugar prices at a level determined, in the main, by the minimum price of cane, it makes the minimum price a fixed price, thereby sapping the capacity of the sugar industry to compete with gur and khandsari for the limited cane supplies. In a year of short cane crop, such a policy, by increasing the pressure of demand on sugar, on the one hand, and accentuating the adverse effects of variations in the size of the cane crop on sugar production, on the other, widens the imbalance between the demand for and supply of sugar. Instead of reducing instability, it tends to increase it.

1.8. Wherever gur competition becomes acute, the sugar industry presses for the linking of cane price to be paid by factories with gur price or for decontrol of sugar. The situation is, therefore, sought to be alleviated by Government, *inter alia,* through *ad hoc* measures that either allow some sugar producers to pay a higher cane price or offer protection to a hardpressed region by raising the all-India minimum price of sugarcane and with it the level of sugar recovery for which it is fixed. The latter alternative reduces, as will be shown in section IV of this chapter, the effectiveness of the policy of paying for cane on the basis of sugar recovery designed to promote the cultivation of high sucrose content varieties. The former gives rise to complaints of regional discrimination and the latter runs counter to the long-term considerations of efficiency in cane cultivation.

1.9. From the standpoint of efficiency, the adverse effects of policy measures are not confined to cane cultivation, however. The industry is provided further protection by increasing the number of zones for which sugar prices are fixed; the number of these zones has increased from the four recommended by the Tariff Commission in 1959 to seventeen in 1963, twenty in 1964 and twenty-two in 1965. This tendency towards an increase in the number of zones is tantamount to a drift in the direction of 'cost-plus' basis of price fixation and hence injurious to the growth of efficiency in the industry. The demarcation of zones ceases to rest on some stable principles; their constant reshuffling makes them so much a function of ad-hoc considerations as to invite complaints of discrimination from, and create uncertainty for, the industry. The same ad-hoc-ism characterises the policy of distribution giving rise to complaints from the industry, trade and State Governments.

1.10. The Commission, in its interim report, had emphasised the need for reducing fluctuations in sugar output and ironing out imbalances between the demand for and supply of sugar through a judicious stock policy and had recommended a set of inter-related measures (which are listed in annexure to Chapter III), for realising these objectives. Conscious of the need to maximise sugar production in the immediate context, to build adequate stocks of sugar as early as possible, it had recommended, amongst other measures, certain incentives taking the form of rebate on excise on sugar both for the normal and the early crushing seasons, the former especially for providing a margin for manoeuvrability to sugar factories in their competition with gur producers. It had also recommended an upward revision in the minimum price for cane from Rs. 4·96 per quintal for 9·4 per cent recovery to Rs. 5·36 per quintal for 9·4 per cent recovery for the 1964-65 season in view of the special circumstances obtaining in that year.

1.11. Government in its subsequent action not only ignored the inter-related aspect of the several recommendations but delayed the announcement of the excise rebate and announced the minimum cane price at Rs. 5·36 per quintal for 10·4 per cent recovery in place of the 9·4 per cent recovery recommended by the Commission. But for the delay in the announcement of excise rebate, the sugar production of 1964-65 could well have been larger by about a lakh tonne. The decision to raise the level of recovery attaching to the minimum cane price from 9·4 to 10·4 per cent had the effect of placing a premium on inefficiency and, if continued, would be a retrograde step from the point of view of promoting efficiency in cane cultivation. Government has not also so far acted upon the recommendation that the portion of excise rebate, which was not passed on by the factories to the growers, should be constituted into a development fund. Unless immediate steps are taken, there is a danger of its being dissipated for non-development purposes. The Commission understands that the rebate in respect of the year 1964-65 has not yet been disbursed. It would, therefore, suggest that the portion of the excise rebate, which has accrued to the factories on the basis of production in 1964-65 and which has not been passed on to the growers in the form of a higher cane price, should be constituted into a development fund, as recommended by it.

1.12. Expressing itself against the practice of *ad hoc* revisions in sugar prices within the same season and against an increase in the number of zones for which sugar prices were fixed, the Commission had recommended five zones for which sugar prices were to be fixed for 1964-65. Government, however, not only continued with the fixation of prices for a large number of zones, but, as mentioned earlier, even increased them to twenty-two in the latter half of 1965 and announced ad-hoc increases in the prices of sugar for some of them.

1.13. The Commission would like to stress that there is scarcely an aspect of present policy pertaining to sugar which is not afflicted with the evil of ad-hoc-ism, the injurious consequences of which can hardly be over-emphasised. And the reason for it is the excessive pre-occupation of the executive authorities with the immediate, unmindful of the long-term effects of their actions. For remedying this defect it is essential that the agency entrusted with the task of formulation of policy should be separate from that responsible for its implementation.

1.14. As shown earlier, stability is a vital need of the sugar economy. The objective of stability is three-fold: that of ensuring adequate sugarcane supplies to the factories in years especially of short crops, of protecting the sugarcane grower (in respect of the price and the disposal of his crop) in years especially of bumper crops, and of ensuring a steady flow of sugar supplies to the consumer at relatively stable prices through years of large as well as short crops. The task of an integrated policy for the sugar economy is to realise these objectives in such a way that it helps promote efficiency in sugarcane cultivation and sugar manufacturing industry. And it is no less important that it should be based on well-defined principles to guide and limit the area of discretion for those who execute that policy.

1.15. The Commission has considered two alternative approaches to the problem. The first one consists of the replacement of the present system of direct controls, with all their defects, by instruments of indirect stabilisation. The other consists of the continuance of the present system of controls but with improvements in those aspects where it is found most wanting. While outlining the two alternative policies below, the Commission is anxious to emphasise that each policy has its own logic and requirements in terms of specific measures and that, for its successful operation, each set of inter-related measures needs to be treated as a package, as it were, to be implemented, not piecemeal, but as a whole.

## II

### *Alternative I: Decontrol of Sugar with a Buffer Stock Policy*

2.1. The problem of ensuring adequate cane supplies to the factories is, in part, a problem of reducing fluctuations in the size of the cane crop, and in part, a problem of the maintenance of parity between the price of sugarcane to be paid by sugar factories and the prices of gur and khandsari. This parity, however, is disrupted by a system of regulation that imparts fixity to the price of cane to be paid by the factories.

2.2. In view of the perishability of the cane crop and the weaker bargaining power of the sugarcane growers *vis-a-vis* the sugar manufacturers, the regulation of cane price is both desirable and necessary. But, in view of the foregoing, what needs to be ensured is only a minimum and not a fixed price. Decontrol of sugar price, by enabling the cane price to vary above the prescribed minimum level, will help maintain the above parity and thus reduce fluctuations in sugar output. But so long as the size of the sugarcane crop continues to fluctuate, it will not—as has been the experience in the past—eliminate them.

2.3. To iron out the remaining imbalances between the demand for and supply of sugar, the decontrol of sugar price needs to be supplemented with a stock policy in sugar. Further, the flexibility of sugar price, though necessary to enable the sugar industry to compete with gur and khandsari for the available supply of cane, needs to be confined within certain limits To enable the industry to pay the minimum price of cane to the growers it is necessary to prevent sugar prices from falling below a certain level, just as to protect the interests of the consumers, they must be prevented from piercing a ceiling. And both the above objectives can be realised through a buffer stock policy in sugar. Such a policy will allow sugar prices to fluctuate within a limited range, given by the minimum and maximum prices fixed for sugar. Sugar will be acquired and stocks accumulated when sugar prices threaten to fall below the minimum and it will be sold, depleting stocks, when prices threaten to rise above the maximum.

2.4. The considerations favouring this policy are: (i) it combines flexibility with stability; and (ii) irons out short period imbalances. Although the trends of supply of and demand for sugar have been largely in balance (such, at any rate, has been the experience of the last fifteen years and it is for an appropriate licensing policy to ensure it in the future), there are short period fluctuations and since these imbalances partake of a cyclical character buffer stock policy seems an eminently suitable remedy.

2.5. Since the demand for cane is derived from the demand for sugar, the minimum price for cane will need to be derived from the minimum price fixed for sugar. The method for doing so, however, is dealt with in para 4.11 of section IV dealing with the regulation of sugarcane price.

2.6. The minimum price for sugar will depend upon (a) what may be called the 'pivot' price for sugar; and (b) the range within which it will be allowed to fluctuate around the pivot price. Since a stabilisation scheme ought not to interfere with the structural shifts of resources inspired by demand, the pivot price should follow the long-term trend of sugar price. Given a certain range—whatever that be—the pivot price needs, in principle, to be fixed at such a level that over the period of a cycle (sugarcane and therefore sugar production has a cycle of about five years) the accumulation of stocks in years of excess production is equal to their decumulation in years of shortage. Since the price, that will do so, is not known in advance, it is best to allow in it a certain flexibility by equating it, in this case, with either a five-year or at least three-year moving average of sugar price, depending upon the extent of variability that is considered tolerable in sugar price. This will ensure that when the buffer stock agency is accumulating more stocks than it is decumulating, the pivot price will automatically tend to fall and *vice versa.*

2.7. The range ought to be fixed with reference to the range of fluctuations in the size of the sugarcane crop. This is because in so far as the fluctuations of sugar price are caused by fluctuations in sugar production and these, in turn, are caused by fluctuations in the size of the sugarcane crop, such a range would help stabilise the grower's income, provided the price he gets for cane moves more or less *pari passu* with the price of sugar. Since a larger crop would be associated with a lower cane price and *vice versa,* it is desirable that, say, an 8 per cent increase in the size of the crop does not lead to a more than 8 per cent drop in its price, for else the total sale proceeds of a larger crop would be smaller than those of a smaller crop thus destabilising over time the growers' net income. The purpose of such a range is to reduce the short period fluctuations in farmers' net incomes rather than to prevent them from rising with a long period increase in the price of sugarcane or a reduction in its cost of production. During the period 1956-57 to 1964-65, fluctuations in the total production of sugarcane have been, on an average, about 10 per cent above the trend and 7 per cent below it. Taking this recent experience as a rough guide, the Commission recommends that for the next five years, the range of fluctuations to be allowed in the sugar price may be fixed at 8 per cent of the pivot price.

2.8. Since the above method of determining the pivot price is based on the free market prices of sugar it faces the difficulty that, when this scheme is to be launched after a period of control, these would not be available for the recent period. In such a situation, the controlled price of sugar for the year immediately preceding the year in which sugar is decontrolled may be treated as the pivot price for the latter year. An average of this price and the actual free market price for the first year in which sugar is decontrolled may be then treated as the pivot price for the following year and so the period of the average may be extended till free market prices for a continuous period of 3 years become available. An alternative approximate way out of the above difficulty is also suggested in the Annexure to this chapter.

2.9. Since, given the range of fluctuations, the pivot price for sugar will change over time, following its long-term trend, it follows that the minimum price for sugar and, therefore, for cane will also change over time. The trend of demand for sugar reflected in its price will thus be allowed to find its reflection in cane price, enabling the trend of cane supplies to follow the trend of demand for sugar, thereby helping achieve a long-term balance between the demand for and supply of sugar.

2.10. In view of the difficulty mentioned in para 2.8, during the transition, *e.g.*, a period of 3 or 5 years following the lifting of control on the price of sugar, the pivot price would not appropriately reflect the trend of sugar price. This implies that the minimum price of sugar also would not provide an appropriate basis for the fixation of the minimum price of sugarcane for this period. It is, therefore, important not to change along the above lines the basis for the fixation of the minimum price of sugarcane during the transition period but to follow instead the Commission's recommendations in this regard made for a period of control in para 4.13 of section IV.

2.11. A buffer stock policy for sugar will not only stabilise, within reasonable limits, the prices and consumption of sugar but also, by preventing the sugar prices from falling below a specified level, enable the factories to pay the minimum price of cane without hardship. Further, by leaving the cane price free above the minimum specified level, it will enable the factories to compete with gur and khandsari for cane supplies, thereby minimising the fluctuations in sugar output. In addition, since gur, khandsari and sugar will be left free to compete amongst themselves for the overall demand for sweetening materials, their price parity will tend to be preserved so that the same buffer stock which stabilises sugar prices will also help exert a stabilising influence on gur and khandsari prices. This would be particularly so if the buffer stock policy is operated with an eye not only on sugar but also on gur prices, releasing more sugar out of the stocks when the upward pressure on gur prices is specially acute and acquiring more sugar when gur prices are declining sharply. A policy of allowing an appropriately regulated forward trading in gur under the supervision of the Forward Markets Commission could then be a useful adjunct to this policy for stabilising gur prices.

2.12. The very same competition between gur, khandsari and sugar which leads to the above advantage, however, constitutes also a limitation of a buffer stock policy. When the overall shortage of sweetening materials pushes up gur and khandsari prices out of line with the ceiling price for sugar, there would be a diversion of demand from gur and khandsari to sugar. This will necessitate the maintenance of a larger buffer stock than otherwise for the successful operation of this policy.

2.13. The Commission is of the view that initially the stocks of sugar required for a change-over to this policy from the present policy of control should be of the order of 12 lakh tonnes. The experience of the recent past shows that the maximum total excess of consumption over production during a succession of years of under-production (1952-53 to 1955-1956) was of the order of 13·78 lakh tonnes. Similarly, the maximum total surplus of production over consumption during a succession of years of over-production (1959-60 to 1961-62) was of the order of 14·56 lakh tonnes. It is important to note, however, that in the former period—a period of decontrol—this excess consumption was met by imports of sugar on a scale that prevented a rise in sugar prices. If prices had been allowed to rise, even if within a certain limit, as they would be under a buffer stock policy, the total of excess demand would have been smaller. Judging from experience, therefore, the Commission is of the view that the initial size of the buffer stock, with which the implementation of this policy might begin, should be 12 lakh tonnes. In the past, sugar consumption has almost invariably recorded a sharp increase in the year in which sugar has been decontrolled. Since for the successful execution of this policy it is vital that stocks should not prove to be inadequate, it is important to emphasise that, in the matter of the initial size of the buffer stock, it is desirable to err on the side of safety rather than otherwise.

2.14. The year 1964-65 began with an opening stock of 1·59 lakh tonnes of sugar. The production of sugar during the year having been estimated at 32 lakh tonnes, the total availability of sugar during 1964-65 comes to 33·59 lakh tonnes. With an estimated internal consumption of 24·5 lakh tonnes and exports of 3·0 lakh tonnes, the year is expected to close with a stock of 6·09 lakh tonnes of sugar. On the basis of the information available so far about the prospects for the sugarcane crop in the coming year, the production of sugar in 1965-66 may be expected to be around 35 lakh tonnes, if right policies are pursued. If a production of this order is realised and internal consumption and exports are placed at about 26 and 5 lakh tonnes respectively, the year 1965-66 may be expected to close with a stock of over 12 lakh tonnes of sugar. It should thus be possible to build up a stock of 12 lakh tonnes out of the sugar production of the current and the ensuing year. Since this stock will get depleted in lean years and then replenished in good years, the magnitude of the annual stock required to be held on an average (over the period of a cycle) is likely to be significantly lower than 12 lakh tonnes and may be assumed to be of the order of 8 lakh tonnes.

2.15. The buffer stock should consist of two parts: one which the industry should be obliged to hold and the other which should be held by the buffer stock agency. The control over the releases of both, however, should be exercised by the buffer stock agency.

2.16. During the last 5 years (1959-60 to 1963-64) the industry has carried, on an average, at the close of the year, stocks equivalent to about 24 per cent of its production. Even excluding the year 1960-61 when the carry-over stocks had amounted to an unusually large figure of 12·6 lakh tonnes, inviting complaints of hardship from the industry and the consequent imposition of the 10 per cent cut on sugar production, the average carry-over stocks for the remaining four years came to about 19 per cent of the production. It would, therefore, not cause any hardship to the industry if it is required to carry a stock equivalent to 20 per cent of its production. The Commission recommends that the industry be subjected to the statutory obligation of carrying stocks which shall at no time be less than 20 per cent of its total production in the preceding season.

2.17. The buffer stock agency will undertake to buy sugar, from any factory which wishes to sell, at the floor price and sell sugar, to any wholesale dealer who wishes to purchase it, at the ceiling price. So long as sugar prices are above the floor price, factories will not want to sell sugar to the buffer stock agency and similarly, so long as they rule below the ceiling price, dealers will not want to buy it from the agency. The purchase and sale transactions of the agency will thus be confined to only those situations in which sugar prices cross the specified limits and the very assurance it will give to buy and sell in such situations will help keep prices within the specified limits. However, when the agency is actually called upon to buy, it may, if it so desires, pay to the factory for the quantity purchased without physically lifting this quantity; it will then merely keep a record of the stocks it holds with the different factories. In view of their experience in carrying stocks and the storage facilities already available with the factories, the Commission feels that the entire buffer stock may with advantage be left in the physical custody of the factories, the agency confining itself to exercising control over its releases and meeting financial obligations pertaining to the stocks held on its account.

2.18. The agency will have to maintain a revolving fund for making payments out of it to the factories from whom it purchases and for receiving payments into it from the dealers to whom it sells. Since the agency will be buying when prices are low and selling when they are high, it will be making a profit out of which it will pay to the factories the storage cost of the stocks they hold on its account. This storage cost mainly consisting of the cost of godown facilities can be easily estimated and prescribed per tonne of sugar per month held by the factories for the agency.

2.19. On the basis of a sugar output of 35 lakh tonnes, the industry's obligation to carry minimum stocks would amount to 7 lakh tonnes. Assuming an average buffer stock of 8 lakh tonnes referred to in para 2·14 above, the part to be held on Government account would come to 1 lakh tonnes and on the basis of the initial buffer stock of 12 lakh tonnes, it would work out to 5 lakh tonnes. The adoption of this policy would involve for Government an interest liability of the order of 5 paise per kilogram per annum for the stocks held on its account.

2.20. The Commission would like to emphasise that the exercise of control on releases should be strictly confined to the buffer stocks in sugar and should, on no account, extend to the remaining sugar output, which the factories should be free to market whenever and wherever they like. This is because the decontrol of sugar price when accompanied with a control on the releases of the entire output of sugar tends to run counter to the interests of the consumers and in favour of the producers. It prevents the most important advantages of the competitive mechanism in promoting efficiency and reducing thereby the cost of production and, therefore, the price of sugar, from being reaped by the society. Finally, it retains all the defects emanating from ad-hoc-ism and suspicions of discrimination connected with the administration of control. A necessary condition for this purpose is that, in applying any selective credit control, suitable relaxation should be made for the sugar industry keeping in view the seasonal character of its operations and the need for maintaining large buffer stocks.

2.21. In addition to the above measures, the Commission recommends the continuation of a system of rebate on excise duty on sugar, even in a period when the price and distribution of sugar are relieved of direct controls and subjected only to indirect regulation through a buffer stock policy in sugar. The present system of excise rebate for sugar, however, needs to be modified along the lines suggested in section III and should be based on the detailed recommendations made by the Commission in this regard, for a period of control on sugar, in that section. True, in a period when sugar is not subject to direct controls, an excise rebate for sugar is not required to provide a margin for manoeuvrability to the sugar factories (as explained in para 3.2 below) in their competition, for available cane supplies, with the gur producers. But it is required to lengthen the duration of the crushing season through the promotion of the cultivation of early and late maturing varieties of sugarcane as also for providing some relief, in the interim, to the existing sugar industry in those regions where it suffers from such handicaps as a very short duration of the crushing season. The justification for recommending a rebate on excise on sugar for the above purposes is explained in section III.

2.22. As for the machinery required for the implementation of the above policy, the Commission recommends that the Government should operate the buffer stock policy through the instrumentality of the Food Corporation of India and with the advice of the Agricultural Prices Commission. Similarly, the quantities required for exports, defence personnel and distribution through fair price shops should be purchased from the sugar factories at a negotiated price by the Food Corporation of India.

## III

### *Alternative II: Control on Sugar*

3.1. As a measure for ensuring adequate cane supplies to the factories in a period of control on sugar, the Commission feels that the price control on gur and khandsari is difficult to enforce and control on the movement of these commodities is undesirable. During the short period for which the ban on inter-state movement on gur was operative in the year 1963-64, it had led to a number of undesirable effects. First, in the absence of a system of retail distribution through ration cards, prices in the deficit states shot up immediately after the ban and those in the surplus states did not come down proportionately with the result that the gur prices ruled at high levels in both consuming and producing states. Second, such an action benefited only a certain group of traders at the expense of the sugarcane growers and the gur consumers. It kept gur prices low in surplus states when cane was being crushed and let them rise subsequently. Moreover, the system of distribution of gur through licensed dealers and permits issued by the State Governments led to a number of undesirable effects, *e.g.*, under-invoicing or over-invoicing of bills, profiteering, diversion of large quantities of gur for purposes other than sweetening, etc. Further, gur being an item of consumption for the low income groups, especially in rural areas, it is not desirable on broader social considerations to ban its movement from surplus areas, except under conditions which ensure equitable distribution and effectively check profiteering. The Commission has, however, recommended certain other measures for dealing with the problem of diversion of cane supplies to gur and khandsari in the factory areas. These measures are listed in para 5.2 of Chapter V. Amongst other measures, the Commission has recommended there (a) re-delimitation of reserved areas so as to make them compact and (b) either exclusion of existing khandsari units and power-crushers completely from reserved areas or a provision for adequate cane supply both for the sugar factory concerned and such khandsari units as already exist in the reserved areas.

3.2. In addition to the above measures, the Commission is of the view that through a rebate on excise on sugar a certain margin for manoeuvrability be provided to the sugar factories in their competition with the gur producers. Excise rebate, when employed for this purpose, is a device to render cane price variable above its specified minimum. It is a method of letting cane price rise to parity with gur price (without a change in sugar price) wherever that is functionally necessary. At present, the diversion of cane from sugar to gur is countered by allowing *ad hoc* increases in the minimum sugarcane price to be paid by individual factories and then re-imbursing them through allowing *ad hoc* increases in the price of sugar. Sugar prices for a group of factories are increased for this purpose by creating sub-zones, thereby increasing virtually the total number of zones for which sugar prices are fixed. This method of dealing with the problem of gur competition leads to a drift towards the 'cost plus' basis of price fixation. The 'cost plus' basis of price fixation, as stated already, perpetuates inefficiency in the industry and is, therefore, against the long-term interests of the country. The excise rebate, on the other hand, will do away with the need for *ad hoc* increases in the minimum price of sugarcane as well as sugar, as also with that for proliferation of zones which encourages a movement in the direction of 'cost plus' basis of price fixation. The excise rebate is thus a device to deal with the problems of gur competition and yet ensure efficiency in the industry.

3.3. The phenomenon of surplus cane which is not crushed by the factories in years of bumper crop has the effect of attracting *kolhus* and power-crushers in the reserved areas of the factories in such years. Once these competitors for sugarcane enter the factory areas, they become a problem in subsequent years of short crop by making it increasingly difficult for the factories to get adequate cane supplies. The problem of diversion thus gets accentuated, perpetuating, in the process, the vicious cycle of *ad hoc* measures mentioned in the foregoing paragraph. On the other hand, if in years of bumper crop, the sugar factories are obliged to crush such surplus cane by, say, lengthening the period of crushing, and the consequent loss in sugar recovery is off-set, even in part, through a rebate on excise duty it would serve as a solution of the problem not only of surplus cane in a bumper year but also of that of diversion of cane in years of short crop.

3.4. The rebate to be effective for meeting the gur competition and for ensuring the crushing of surplus cane, has to be large enough. This would be possible only when there is a sufficiently high excise duty. The fact that the present excise duty on sugar is high enough for the purpose is thus a very helpful factor in the situation.

3.5. The rebate may be related to (a) sugar production in excess of that of some past period, or (b) production which is in excess of what would be obtained with the utilisation of a certain proportion of installed capacity of the sugar factories.

3.6. The disadvantages of (a) are: (i) while deciding to pay a cane price in excess of the specified minimum, a factory may not know the magnitude of the excess production it will be able to achieve at the close of the season, and thus the total quantum of rebate and, therefore, the margin made available by it to pay a higher cane price. This uncertainty might inhibit it in offering price-competition to gur and khandsari for available cane supplies; and (ii) since a short crop of cane comes after a larger one a factory may find it difficult to improve upon its previous performance, particularly if the discrepancy between the crops is large, thus rendering the rebate incentive ineffective. And even if the period of reference for calculating excess production is freshly chosen from year to year in such a way as to render the incentive effective, the weakness would remain that factories in some regions (where crop is good and gur competition is absent) would reap a windfall whereas those in other regions may not find it sufficient to combat gur competition.

3.7. The second basis (b) for allowing rebate is superior to that of the output of some past period in so far as the latter may not ensure for some factories the prospect of being able to improve upon their performance in the year chosen as the standard of reference. The incentive to do well becomes available to all irrespective of how differently they fared at the hands of nature in any given past period. Its principal weaknesses, however, are: (i) the concept of installed capacity, depending upon the daily crushing capacity and the length of the crushing season, is not precise enough and (ii) it will encourage the tendency to understate capacity.

3.8. In view of the above difficulties, a moving average, say, a five-yearly one, of the actual sugar production of each factory could serve as a good approximation to its effective production capacity. It embodies a recognition of the fact that if a factory is suffering from chronic under-utilisation of its capacity it is, apart from the initial error of having installed excessive capacity, doing so primarily for reasons beyond its control and should not be penalised for them. Being an average of the actual sugar production, it takes into account the relevant average daily crushing capacity, the duration of the crushing season as well as recovery. Since it is based on actual performance, it does away with the problem of understating capacity, for the only way of doing so is to deteriorate one's performance and this involves forgoing the benefit of excise rebate. Further, this being an objective method of determining capacity, it obviates the need for technical determination of each factory's installed capacity. Finally, in view of the normal lag between the installation of new capacity and production attaining a level consistent with it, a moving average has the advantage of avoiding short-period hardship to new or expanding units. The Commission recommends, therefore, that the excise rebate be allowed every year on the sugar production of each factory in excess of 90 per cent of what may be called "effective production capacity". The effective production capacity may be defined as the average production for five years preceding the year concerned, for each factory. For a factory which has worked for more than one year, excluding the trial run, but less than five years, the average for the entire period of its working may be taken as the 'effective production capacity'. For a completely new factory, the 'effective production capacity' may be taken as 90 per cent of the rated capacity of that factory multiplied by its sugar recovery and the average duration of the relevant zone for the preceding five years.

3.9. Until the early and late varieties of sugarcane are propagated, it would not be in the social interest deliberately to encourage sugar production outside the normal crushing season in view of the loss of sugar it entails. Since, however, early cane varieties happen to be generally low yielders, excise rebate on early crushing would be required to enable the factories to pay a higher price for this cane to encourage early varieties. It would be in the social interest to extend the crushing period and thus economise on overhead costs by encouraging these varieties, so long as the economy exceeds the additional cane cost of these varieties. When employed for this purpose, excise rebate will have to be a continuing feature and will need to be announced in advance, for, say, each five-year period.

3.10. At present, excise rebate is allowed separately for early, normal and the late crushing periods. The idea underlying these rebates is to maximise the production of sugar in specific years, indeed, in specific parts of the same year. If early cane varieties are to be promoted, the farmer and the factory have to be enabled to plan ahead, the former on the assurance that he will be compensated for the lower yield of these varieties and the latter on the assurance that it will be allowed a cushion through excise rebate to enable it to pay a higher price to the grower for these varieties. Since the promotion and popularisation of these varieties itself would take time, such an assurance of a continuing incentive becomes all the more necessary. So conceived, the excise rebate ceases to be a measure for dealing only with a specific emergency necessitating 'distress crushing' or calling for an urgent increase in sugar production but becomes a developmental measure for promoting early cane varieties. The present differentiation between the rebate for early and late crushing encourages uneconomical crushing because of the loss of sugar it entails. If such a system is replaced by a single uniform rebate for the entire season, the factories would not only be free, but would be under an inducement, to concentrate as far as possible their crushings in the optimum crushing period. The Commission, therefore, recommends that instead of the present basis of having separate rebates for the early, late and normal crushing seasons, there should be a uniform basis for rebate on a slab system as recommended in the following paragraph. It stresses in this connection, for the reasons explained above, the importance of announcing this rebate on a long-term basis, *e.g.*, for five years.

3.11. The rebate on excise duty, applicable to the entire year's production, should be calculated on the basis of the following rate on production in excess of 90 per cent of the 'effective production capacity' as defined in para 3.8 above.

| | | |
|---|---|---|
| (a) | On the first 10 per cent over 90 per cent of the 'effective production capacity' .. .. .. | 20 per cent. |
| (b) | Next 10 per cent .. .. .. | 40 per cent. |
| (c) | Balance .. .. .. | 50 per cent. |

Such portion of the rebate as may not be passed on to the grower through price or transport charges for cane should not be included in profit but should be constituted into a development fund for the factory concerned to be earmarked *inter alia* for sugarcane development work.

3.12. Ideally, from the standpoint of promoting efficiency in the industry there should be a uniform ex-factory price of sugar throughout the country. But, as will be argued in section IV, such a uniform price is not feasible so long as the present system of cane price regulation is not modified along the lines suggested there. While realising the need for providing some protection to high cost regions in the immediate future, the Commission is, however, firmly of the view that the system of sugar price fixation should not be allowed to degenerate into a 'cost plus' basis. In the existing situation, therefore, the Commission favours the system of fixing sugar prices on a zonal basis, but zones are to be few and so demarcated as to be broadly homogeneous from an agro-economic point of view. Such a system, while affording protection to the existing industry from the handicaps of agro-climatic conditions, will not protect it for the inefficiency arising out of factors within its control, unlike the present system of a large number of zones.

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3.13. The price of sugar so determined, however, may not ensure an off-take sufficient to leave only normal carry-over stocks of sugar with the factories. In years of bumper crops when the factories are obliged to crush all the cane they are offered in the factory areas, the factories may find themselves saddled with excessive stocks leading to financial hardship or such undersirable policy measures as the sudden imposition of a ten per cent cut on sugar production in 1960-61. Such short-sighted measures are detrimental to smooth working; they cause hardship to the growers and shake their confidence in cane cultivation thereby aggravating the problem of adequate cane supplies to the factories in the ensuing years. Similarly, acute shortages make the effective enforcement of control and the smooth working of distribution machinery difficult. In the interest, then, of stabilising the sugar availability for the consumer, providing stability to the industry and the grower, and rendering the working of controls smooth and effective, a stock policy in sugar becomes a necessary accompaniment of a sugar control policy. Such a stock policy will stabilise sugar consumption by holding stocks, in excess of the normal carry-over stocks of the industry, on Government account or enabling the industry to hold them with financial assistance from Government, in years of large production and releasing them for distribution in years of short production. In a period of control on sugar, the stocks required for this purpose would be much less than, perhaps half of, what would be required for a buffer stock policy in a period of decontrol.

3.14. In this connection, the Commission would stress, as it has done earlier in the context of a buffer stock policy for sugar, the desirability of operating this stock policy so as also to stabilise gur prices by releasing more sugar in areas where gur prices threaten to rise unduly and *vice versa.* This, alongwith the policy of allowing a well-regulated forward trading in gur under the auspices of the Forward Markets Commission, would help in stabilising gur prices.

3.15. In years of short cane crop, the Commission would emphasise the desirability of considerably stepping up the releases of sugar at the time of Dussehra or Diwali, whichever happens in the year concerned to be nearer the time when *kolhus* are set up for gur manufacture, so as to discourage the setting up of *kolhus* in the factory areas. Alternatively, the farmers who supply cane to the factory, especially in areas where gur competition is acute, should be entitled to the same quantity of sugar as is allowed to people in urban areas. To be effective in their purpose, it is important that these measures be accompanied with adequate publicity.

3.16. Many State Governments have expressed dissatisfaction with the present system of linking sugar factories with the states which are required to obtain their sugar requirements from those factories, on the ground that it involves the movement of sugar from one surplus state to another and even from a deficit area. In order to minimise the cost of transport of sugar, the time taken by its movement and the load on the railway system, it is necessary to reduce the cross-haulage of sugar to the minimum. While recognising that the minimisation of cost of transport may require, in certain cases, the movement of sugar from one surplus state to another or even from a deficit area, the Commission feels that it would, on the whole, be in the interest of reducing unnecessary cross-haulage if surplus states are allowed to obtain their requirements of sugar from factories within these states. Similarly, as a rule, sugar should not be allowed to move out of a deficit state. Certain exceptions to the rule may, however, be justified and will need to be admitted. To illustrate, even though the state of Assam is deficit in the supply of sugar, the Commission would not suggest that sugar should not be supplied by this state to Nagaland, N.E.F.A., etc.

3.17. The Commission recommends that the machinery for the distribution of sugar in a period of control should be, as far as practicable, the same as exists for the handling and distribution of foodgrains. During the period of control on sugar, it favours the system of retail distribution of sugar on the basis of identity cards and recommends that the distribution of a certain quantity of sugar through fair price shops should continue even when control is lifted from sugar.

3.18. The suggestion has been mooted that the formulation and execution of policy relating to different aspects of sugar should be concentrated in a specialised body called the Sugar Marketing Organisation. The Commission recognises that by virtue of its importance in the internal economy and export trade of the country, sugar is an important enough commodity to justify serious consideration being given to the above proposal. It has, however, to be noted that the proposed Sugar Marketing Organisation was supposed to handle the internal and external distribution of sugar. But, for handling internal distribution there is now the Food Corporation of India and, for handling external trade, the State Trading Corporation of India.

3.19. Since the State Trading Corporation of India has already developed an expertise and a net-work of organisation for handling foreign trade in a number of commodities, it would be more economical—in view of the existence of these overheads—to entrust the export trade in sugar also to this very body. In regard to the internal distribution of sugar, it is important to recall that the proposal for the Sugar Marketing Organisation was conceived when the Food Corporation of India had not come into existence. Now that it exists, it would be very uneconomical to set up a specialised commodity organisation for the above purpose. Finally, in view of the fact that the formulation of an integrated agricultural price policy has already been entrusted to the newly set up Agricultural Prices Commission, it is only appropriate that the price policy for sugarcane and other related matters also is handled by this body. In view of the above mentioned reasons, the Commission is against the establishment of the Sugar Marketing Organisation and recommends the following machinery for operating the system of control outlined above.

3.20. The releases and movement of sugar should be managed by the Food Corporation of India. The export policy should continue to be decided by Government as at present but the implementation of export policy should be handed over to the State Trading Corporation of India. The Agricultural Prices Commission should be entrusted with the task of: (a) fixing the sugar price and minimum sugarcane price, (b) reviewing the composition of zones for fixation of such prices, and (c) advising on stock policy.

## IV

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### *Regulation of Sugarcane Price*

4.1. At present the minimum price of sugarcane to be paid by the factories is fixed by Government on an all-India basis. The price fixed is related to a certain (specified) level of sugar recovery from cane and for this, or a lower, level of recovery, it is uniform throughout the country. It is subject to a certain premium for every 0·1 point increase in recovery above the specified level but is not subject to a discount below it. Also the premium is not the same as the basic minimum price per 0·1 point of recovery; in fact, it is less. The price of sugarcane, thus, varies from factory to factory with differences in recovery above the specified level—though not on a proportionate basis—but is the same for all factories whose recovery is below it.

4.2. By virtue of its uniformity throughout the country it disregards regional differences in the cost of production of cane per tonne, whether measured by the value of the resources employed for raising cane or by the value of the alternative crops that could be raised with the same resources. Thus, in regions with a relatively lower cost of production of cane, it keeps the minimum price of cane higher (raising thereby the cost of sugar) than it would be under free market conditions. Under fre market conditions, if the production of cane were sufficient to keep it price near the level of its cost of production, the benefit of regional advantage in the production of cane (as reflected in its lower cost) woul accrue to the sugar manufacturer. The same would happen even if th minimum price of cane were fixed but on a regional basis having regar to its regional cost of production, under conditions of a free market i sugar. But not when under such conditions, the minimum price of can is uniform throughout the country. In conditions, such as these, th principle of uniformity (in terms of sucrose content) in cane price, thus becomes a method of preventing the benefit of regional advantage in th production of cane (as reflected in its lower cost) from accruing to th sugar manufacturer; it becomes a method of transferring it to the can grower. Since, in view of the stronger bargaining power of the suga factories *vis-a-vis* the cane growers, a free market in sugarcane would no automatically ensure the transference of this benefit to the grower, it help protect the growers' interests in the respect. Further, it makes the stimulu of a higher minimum price work for a relative shift of sugarcane acreag in favour of those regions which possess a comparative advantage in can cultivation and in so far as the expansion of the industry is dependen upon cane availability, it encourages the growth of the sugar industry ir those regions provided the licensing policy permits such a development.

4.3. In the opinion of the Commission, the principle of uniformity is desirable because it does away with the danger of arbitrary discretion in fixing different cane prices (per unit of sucrose content) for different regions, offers a more effective protection to the grower, and facilitates the growth of the industry in those regions which are most suited to it. But under conditions of a free market in sugar it bears rather harshly on the sugar industry of those regions where it has grown in the past, under the stimulus of a lower cane price. In so far as a lower cane price served to off-set the handicaps of the sugar industry in such regions flowing from, say, the short-duration of the crushing season there, a uniform cane price now hits it by pushing up its cost of production when, under free market conditions, the price it gets for its sugar tends to equality (subject to cost of transport) with that of other regions.

4.4. The linkage of a minimum price of cane with the variations in recovery has its justification in the incentive it gives to the growers for producing cane varieties with higher sucrose content thereby promoting efficiency in cane cultivation. But when the linkage itself is partial, allowing a premium for every increase in recovery above a specified level but not a discount for every decrease below it, it serves this objective only partially. The incentive-orientation of this system suffers in the measure that the specified level of recovery gets pushed up, for, in all those regions whose recovery lies below the specified level, this system of payment for cane boils down to that of payment on a weight basis.

4.5. If the minimum cane price were subject to premia as well as discounts and if these premia and discounts for each percentage point were the same as the basic minimum price of cane for one per cent of recovery, then, this minimum price (if it synchronised with the price actually paid by the factory) would tend to, even though it would not completely, equalise the cane cost per unit of sugar in different regions. It will stop short of complete equalisation because, among other reasons, the crushing cost for the same quantity of cane but with a higher recovery would be lower per unit of sugar manufactured from it. When, however, the premia allowed for higher recovery are not based on the principle of proportionality (referred to above) but are such as raise the cane price less than proportionately to the increase in recovery, they further reduce the cane cost of manufacturing sugar in regions of high recovery compared to that of other regions. Finally, the absence of a system of discounts raises the cane cost of sugar in regions whose recovery is below the specified level relatively to that of regions whose recovery is above it. Both of these features relating to existing premia and absence of discounts place those regions, whose recovery is below the specified level, in an even worse position than it would be with just a uniform price of cane for one per cent of recovery.

4.6. Thus, minimum cane price regulation, in its present form, has the effect, under conditions of a free market in sugar, of placing the sugar industry of some regions in a position of disadvantage relatively to that of other regions, even though the former regions may not be so disadvantageously placed in the cultivation of cane. It calls, therefore, for the protection of such regions. And, as this protection cannot be provided through a differentially lower excise for these regions, it has to be afforded through the provision of a relatively higher ex-factory price of sugar, which in turn, implies the continuance of control on sugar price in the country. Further, since the need for such protection is greater in periods of large crops than in those of small crops, it calls for a system of continuing control through years of large as well as short crops.

4.7. Thus, the present system of regulation of cane price, under conditions of a free market in sugar, is inequitous for the sugar industry in different regions. It not only creates hardships for the industry but may even make its survival difficult in certain regions in a long-term context. If these hardships have to be softened, this can be achieved only by perpetuating the system of control on sugar price. Such a control, however, makes the minimum price of cane a fixed price and accentuates, as mentioned earlier, the problem of cane supplies to the factories, leading inevitably to *ad hoc* increases in the prices of sugarcane payable by specific factories or raising the all-India minimum price of sugarcane along with the level of recovery associated with it. Just as a continuing control on sugar price is detrimental to efficiency in the sugar industry, so also a high level of recovery associated with the minimum price of cane is detrimental to promoting efficiency in cane cultivation in the areas where the average level of recovery is traditionally well below that for which the minimum cane price is fixed. Therefore, if a free market in sugar is to be achieved and long-term efficiency in sugarcane cultivation is to be promoted, the present system of regulation of cane price needs to be reformed along the lines discussed in the following paragraphs.

4.8. If premia could be cast on the principle of proportionality and supplemented with like discounts or, in the alternative, the specified level of recovery could be lowered sufficiently so as to approximate the lowest regional level of recovery observed in the country, the regional differences in the cane cost of sugar could be so largely narrowed down as to make the minimum cane price regulation (so modified) consistent with an ex-factory price of sugar, uniform throughout the country. If, however, the minimum price of cane is linked with the average sugar recovery obtaining in the country, a system of discount for every decrease in recovery below this level becomes essential to achieve the above objective. With the exception of the incidence of short-duration, the differences in the cost of manufacturing sugar would then reflect not so much the regional differences caused by natural factors as the relative efficiency of the sugar factories. As for the very short-duration of crushing season in certain parts of the country, the remedy lies in the shifting of these factories to more favourable areas within the state concerned or alternatively in a vigorous drive for the development of sugarcane cultivation in these areas.

4.9. The reason which prompts the pitching of the specified level of recovery high is the same which keeps the premia at a less than proportionate level and indeed allows for no discounts at all; it is to enable the sugar factories to pay a higher cane price in regions where gur competition is acute without allowing a corresponding increase in cane price in other regions, so as to moderate the overall increase in sugar price. The reason flows from the desire to use minimum cane price regulation for purposes other than those for which it is intended, namely, to afford protection to the growers and to induce efficiency. The Commission has already suggested the measures which will enable the factories to withstand gur competition and receive an adequate flow of cane supplies. It suggests, therefore, that premia be cast on a proportionate basis. Aware of the difficulties involved in introducing a system of discount as also in a drastic lowering of the specified level of recovery in the immediate future, it recommends, nevertheless, that the latter be brought down to 9·4 per cent in 1965-66, if possible, and 9·0 per cent in 1966-67, in any case. The detachment of minimum cane price regulation from extraneous ends will go a long way in removing that ad-hoc-ism which so much characterises the present policy and gives rise to suspicion and inter-regional tension.

4.10. The foregoing has dealt with the implications of the present features of minimum cane price regulation and the modifications required therein. The principles that ought to guide the determination of the level of this price may now be considered. These principles, however, would be different according to whether the cane price is to be determined in the context of a free market in sugar subject to regulation through a buffer stock policy or in the context of a control on sugar prices.

4.11. In the former case, as already mentioned, the minimum price for cane would be derived from the minimum price fixed for sugar. The Commission suggests that the minimum price for cane per quintal should be a certain (appropriate) percentage (as in several other sugar producing countries) of the net realisation from sugar (valued at its minimum price) obtained from a quintal of sugarcane. Once this percentage is determined, the minimum price for sugarcane will vary according as the minimum price for sugar varies over time.

4.12. The above scheme is consistent with both: the fixation of a mere minimum price for cane and its regulation through linking it with the price of sugar. The advantage of a linking formula is that it automatically provides the benefit of a rise in sugar price to the growers which is not likely to happen, in its absence, where the pressure of gur competition is weak or non-existent and/or the number of cane growers feeding a factory is so large as to place them in a relatively weaker bargaining position. Under the linking arrangement, if worked successfully, sugar manufacturers are reduced to receiving more or less a processing charge, thus, removing the conflict between the interests of the producers and the growers. There are countries where such an arrangement does in fact exist, cane growers sharing in the vicissitudes of the sugar trade with little to complain against the processors. The principal implication of such an arrangement is that it involves deferred payment and its workability presupposes, therefore, either a certain capacity on the part of the grower to wait for payment or a system of advance payment. That is why the system works successfully in countries where cane is grown under a plantation system or the farms are large. Despite the fact that in India a sugar factory is fed by a very large number of small growers, the existence of cane co-operative unions makes the above arrangement a feasible proposition. The Commission would, therefore, recommend it for the consideration of Government. Arrangements should be made to ensure that the deferred payment is made not later than 3 months from the close of the season, the minimum price being paid at the time of the delivery of the cane by the growers. In this connection, the Commission would also underline the desirability of paying to the cane grower on the basis of the sucrose content of the cane delivered by him rather than the recovery of sugar therefrom, for the latter depends not only upon the former but also the efficiency of the sugar manufacturer. Besides, a system of payment based not on the sucrose content of a grower's cane but on the average recovery of sugar from cane supplied by all the growers to a factory seriously undermines the incentive it is intended to provide to the cane grower for taking to the cultivation of high sucrose content varieties of cane. A system of incentive to be effective ought to be based not on an average but on the quality of cane supplied by each individual grower. The Commission understands that the National Sugar Institute has evolved a method in this regard which can be introduced without any difficulty. The Commission recommends that this method of payment should be implemented from the 1966-67 season, and necessary measures, including enactment of a statute, should be initiated immediately.

4.13. Under a system of control on sugar prices, the minimum price for cane has already to be known before the controlled price for sugar can be determined. Unlike in a system of free market in sugar, it cannot be derived from the sugar price. In this case, the Commission suggests that, in principle, the minimum price of cane should be so fixed as to cover the bulk-line opportunity cost of cane cultivation, the bulk-line referring to that around which the opportunity cost of the largest number of cane growing regions lies. Once so determined, the minimum price of cane should be adjusted from year to year on the basis of an index of the prices of competing crops so as to preserve the parity between the price of sugarcane, on the one hand, and the prices of competing crops, on the other. The objective underlying this principle of price fixation for sugarcane is to prevent a net diversion of area, especially from foodgrains crops, to sugarcane. Since, with improvements in cane cultivation and the consequent reduction in its cost of production (per tonne), such an adjustment will not preserve the parity between the net profitability of sugarcane and that of competing crops, it will be necessary to conduct a cost inquiry for determining this parity and thence the base price (minimum) of sugarcane, periodically, say, on a five-year basis. A uniform minimum price so fixed will provide an expansionary stimulus to regions with a lower opportunity cost and will tend to discourage cane cultivation in regions of high opportunity cost. The existing sugar industry in the latter set of regions can, however, pay a higher price to attract the required cane supplies out of the cushion available to it in excise rebate. The encroachment this will make on its resources relatively to those of the sugar factories in other regions will have two beneficient effects: (a) it will discourage the further expansion of the sugar industry in such regions and (b) it will act as a pressure on the industry to take to cane development work with a view to making cane cultivation lucrative in such areas.

4.14. The alternative of fixing the minimum cane price with reference to the opportunity cost of regions, where this cost is the highest is not desirable, for it contains a built-in stimulus for the overall expansion of cane acreage in the country. The task of fixing this minimum price of cane from time to time is best entrusted to the Agricultural Prices Commission.

4.15. It has been argued in the foregoing that: (a) the specified level of recovery associated with the minimum price fixed for cane needs to be reduced to something like the lowest regional level of recovery obtaining in the country and (b) the premium for every 0·1 point increase in recovery should be the same as the basic minimum price of cane per 0·1 point recovery. These two reforms in the present system of fixation of minimum price for cane are specially important if the price of sugar is decontrolled, but the former is important even if control on the price of sugar continues. It has been represented to the Commission that if the level of recovery for which the basic minimum price of cane is fixed is too high, as it presently is at 10·4 per cent, it destroys the incentive on the part of the growers to take to sugarcane varieties with a higher sucrose content, in regions whose recovery falls short of this level by a wide margin.

4.16. Aware of the difficulties involved in a drastic lowering of the specified level of recovery (or in the alternative, of introducing a system of discounts) in the immediate future, the Commission is nevertheless of the view that the specified level of recovery be brought down to 9·4 per cent in 1965-66, if possible, and 9·0 per cent in 1966-67, in any case.

4.17. In view of the pressure of gur competition and the need for maximising sugar production, the Commission, in its interim report, had recommended the minimum price of cane at Rs. 5·36 per quintal (Rs. 2 per md.) for 9·4 per cent recovery purely as a temporary measure for the year 1964-65. Having regard to the prospects of the sugarcane crop in the coming year, *i.e.*, 1965-66, the Commission is of the view that the minimum price of sugarcane, which was initially announced for the year 1964-65, is adequate for 1965-66, considering the returns from competing foodgrain crops. Several State Governments have in fact expressed themselves in favour of this reduction. In this context, it would be useful to make a distinction between the minimum price as notified and actual price as paid in 1964-65. The Commission feels that there is a strong case for fixing the price of sugarcane for 1965-66 at Rs. 4·96 per quintal (Rs. 1·85 per md.) for 9·4 per cent recovery, subject to an increase of

4·0 paise per quintal (1·5 paise per md.) for every 0·1 point increase in recovery above this level, especially for preventing diversion of land and other inputs from foodgrains to sugarcane in the present emergency. If that is found difficult, the principle of proportionality in fixing the premium should be followed in any case from 1966-67 when the minimum price of sugarcane should be fixed at Rs. 4·82 per quintal (Rs. 1·80 per md.) for 9·0 per cent recovery subject to an increase of 5·36 paise per quintal (2 paise per md.) for every 0·1 point increase in recovery above this level. The announcement of the minimum price for 1966-67 should be made by December, 1965, *i.e.*, well in advance of the commencement of sowings.

4.18. The price of Rs. 4·96 per quintal (Rs. 1·85 per md.) for 9·4 per cent recovery for 1965-66 is for cane delivered at the factory gate and is, therefore, subject to a deduction for cost incurred by the factory in transporting such cane as is not delivered at the factory gate. The Commission is not in favour of the fixation of the minimum price of sugarcane on an ex-field basis because it implies the inclusion of the entire cost of transporting cane from the field to the factory in the sugar price. In order to avoid loss through driage, it is important to discourage long haulage of cane and this requires that the minimum cane price be fixed not on an ex-field but on an ex-gate basis, subject to a certain, but not excessive, deduction from the cane price for the cost incurred for transporting cane by the factory. At present, a deduction upto 32 paise per quintal is allowed from the minimum price for sugarcane delivered at the cane-purchasing centres connected by rail, and a deduction of 2·5 paise per quintal, per kilometre, subject to a maximum of 32 paise, in the case of sugarcane delivered at cane-purchasing centres connected by road, if such cane is transported by the sugar factory at its own cost. For purposes of this deduction, the Commission is not in favour of a distinction being drawn between the cost incurred by a factory in transporting cane from an outside purchasing centre and that incurred in transporting it from the farmer's field.

4.19. In view of the urgent need for discouraging the cultivation of disease-ridden or otherwise unsuitable varieties of sugarcane, the Commission recommends that the minimum price fixed for cane should be applicable to only the approved varieties (announced for each region from time to time) or, in the alternative, it should be subject to a discount of 20 per cent for non-approved varieties.

## V

5.1. The foregoing has outlined the essential ingredients of the two alternative policies of control on, and decontrol of, sugar respectively in view of the present emergency and the fact that the requisite stock of sugar has yet to be built up, the Commission recommends the continuance of control on the lines of Alternative II during 1965-66. Every effort. however, needs to be made to augment the present stock so as to reach a size of 12 lakh tonnes by October, 1966. It has already been shown in para 2·14 that this target is well within reach if care is taken to maximise sugar production and necessary caution is exercised in respect of its releases. If a stock of about 12 lakh tonnes (including the carry-over from 1964-65) is built up by October, 1966, the Commission would strongly recommend the adoption of Alternative I from the beginning of the 1966-67 season If on indications at the close of the current season, the year 1966-67 promises to be good in regard to the prospects for sugar production, even a shortfall of about a lakh tonnes or so in stocks should not deter the Government from launching the policy of decontrol of sugar.

5.2. The Commission has recommended in paras 3.2—3.4 and 3.10 above that a rebate on excise duty on sugar should be allowed on a continuing basis in periods both of control and decontrol of sugar. It will be useful to recall here the justification for this measure. During a period of control on sugar, it is designed to serve, as has been shown in paras 3.2 to 3.10 above. as a solution of the problem not only of surplus cane in a bumper year but also of that of diversion of cane in the years of short crop, without recourse to *ad hoc* increases in the prices of sugarcane and sugar which make for a drift in the direction of 'cost-plus' basis of price fixation. It is designed also to promote the cultivation of early varieties of sugarcane which are low yielders and the popularisation of which would take time and therefore require the assurance of a continuing incentive. During a period of free market in sugar, the excise rebate is required not only for the promotion of early cane varieties but also for reducing the inequitous effect of the present system of cane price regulation on the sugar industry in different regions. The sugar industry in regions where recovery is low has to be provided relief, so long as the system of cane price regulation is not reformed. Even when it is reformed along the lines suggested by the Commission, some relief would be needed for the industry in regions where it may not get adequate cane supplies without offering a higher price. Since, in the interest especially of the growers, the existing factories in most of the unfavourable areas may have to continue, they would require some relief in the short run and an inducement to take to cane development work in the long run. The excise rebate recommended by the Commission serves both the purposes. In a period of decontrol, excise rebate has thus three objectives :

(a) To remove inequity inherent in the present system of cane price regulation;

(b) To promote cane development, whether through the propagation of early and late varieties by compensating for lower yield and recovery or in other ways, so as to increase the economic viability of the existing industry in 'problem areas' as well as promote efficiency generally; and

(c) To induce the industry to operate at full capacity and even exceed it, thus making for a progressive increase in sugar production.

The rebate as contemplated should not involve any burden on the exchequer, as it would be more than covered by the excise collected on the additional output which would not be produced but for the rebate.

5.3. Seen in isolation, the problems of severe gur competition or surplus cane may be looked upon as problems confined to certain regions (or even to specific years). So also areas where early varieties have a large scope for propagation or areas where cane development is urgently required to make the existing industry viable there, may be looked upon as specific regions in need of certain development measures. But seen together, these problems are quite extensive in space and time. Not only do they call for but also justify a treatment through a general method which will prevent the recrudescence, under the guise of specific cures, of those ad-hoc and short sighted (because they disregard the long-term objective of efficiency) measures which so much afflict the present policy.

5.4. The Commission would like to emphasise the desirability of encouraging the production and consumption of off-colour (raw) sugar in preference to that of white sugar. The production of off-colour sugar by helping economise on the consumption of sulphur will save valuable foreign exchange. It can help augment the production of sugar in the country without additional resources in the sense that a given installed capacity of the industry can produce more off-colour than white sugar. Unlike in the case of white sugar, the molasses produced as a by-product of off-colour sugar are edible and constitute a valuable cattle feed. The fact that present market for molasses for the manufacture of industrial alcohol faces the prospect of being captured by naptha-based alcohol in the future, makes it important to plan ahead for an alternative utilisation for molasses, e.g., as cattle feed. And this requires that the production of off-colour sugar should be encouraged so that the molasses produced are edible. The double-cured raw sugar of 99·4 pol (i.e., off-colour sugar) has a fairly good keeping quality and does not, in respect of taste, compare unfavourably with white sugar. In view, however, of consumers' preference for white sugar, the consumption of off-colour sugar will have to be encouraged through necessary publicity and an adequate price differential between the two types of sugar. This can be achieved by having different rates of excise duty on white and off-colour (or raw) sugar and keeping the rate on the former sufficiently higher (say, by 25 paise per kilogram) than that on the latter. Since the two types of sugar are two different commodities, there should be no legal difficulty involved in the imposition of excise duty at two different rates on the two commodities. Further, off-colour sugar of 99·4 pol being easily distinguishable from white sugar, there should be no practical difficulty involved either. The Commission, therefore, recommends that the sulphitation factories be required to produce a certain appropriate proportion of their sugar output in the form of raw sugar.

सत्यमेव जयते

1. When a buffer stock policy is launched after a period of control on sugar price, it faces the difficulty, referred to in para 2·8 of Chapter IX that the free market prices of sugar would not be available for a recent period to determine its pivot price. One method for dealing with this difficulty is described in para 2·10 of the above Chapter. An alternative approximate way out of the difficulty is being outlined here. Starting with a period of decontrol, the moving averages may be worked out on the basis of the actual free market prices for periods of decontrol and estimated prices for those of control. The estimated prices may be worked out by inflating the pivot price for each year by 10 per cent, this being the range of fluctuation allowed above the pivot price. This may be done on the realistic assumption that during periods of control, which are also periods of scarcity, if sugar prices had been left free except in regard to the indirect influence of the buffer stock policy, they would have ruled near the ceiling prices. The results of an illustrative exercise to determine the pivot price on the above basis, through a 3-year moving average of the wholesale prices of sugar at Kanpur (except for periods of control), are presented in the following table:

TABLE 3

(Rs. per quintal)

| | year | pivot price | estimated prices for periods of control | |
|---|---|---|---|---|
| no control . . . . . . | 1952-53 | | | |
| | 1953-54 | | | |
| | 1954-55 | | | |
| | 1955-56 | 82·21 | | |
| | 1956-57 | 83·05 | | |
| control from July 1958 to September, 1961 | 1957-58 | 84·11 | (+)8·4 | = 92·5 |
| | 1958-59 | 87·7 | (+)8·8 | = 96·5 |
| | 1959-60 | 92·7 | (+)9·3 | =102·0 |
| | 1960-61 | 97·0 | (+)9·7 | =106·7 |
| no control . . . . . . | 1961-62 | 101·7 | | |
| | 1962-63 | 105·2 | | |
| control reimposed in April, 1963 . . | 1963-64 | 108·5 | (+)10·9 | 119·4 |
| | 1964-65 | 112·8 | (+)11·3 | 124·1 |

2. The pivot price for the year 1955-56 is the average of the free market prices ruling during the preceding three-year period ending 1954-55 and so on. For the year 1957-58, when the price of sugar was controlled, the pivot price obtained on the above basis is inflated by 10 per cent to reach what would have been the ceiling price of sugar if, instead of a direct control on sugar price, a policy of buffer stock had been followed. The price so inflated has been taken as an approximation to the free market price of sugar that would have prevailed under these conditions. Using this price for 1957-58 along with the pivot prices for the preceding two years for working out a three-year average the pivot price for the year 1958-59 has been arrived at. Inflating, in a similar manner, the pivot price for 1958-59 and using the resulting price for working out the next three-year moving average, the pivot price for 1959-60 is obtained and so on.

## CHAPTER X

# COST SCHEDULES

### 1. *History of the Schedule*

1.1. The historical background relating to the preparation of cost schedules has been presented in Chapter III.

1.2. After an exhaustive examination of the cost structure of the industry in 1959, the Tariff Commission came to the conclusion that any attempt to construct a cost schedule for the entire country at a uniform recovery and for an identical range of duration would result in inflating the all-India cost. It decided that for practical purposes regional schedules which took note of the working results of a representative cross-section of the units in a particular region would be equitable and satisfactory. On the other hand, it was necessary to guard against the danger of increasing the number of regions unduly, as this would amount to a drift towards the 'cost plus' basis of price fixation which put a premium on inefficiency.

1.3. At the time of the Tariff Commission inquiry 1959, there were 157 factories in production. Of these, a sample of 48 factories was selected for the cost survey. The selection of these factories was made having regard to the regional characteristics relating to duration of season and recovery, relative importance of the regions and varying capacities. The Tariff Commission grouped the sugar producing states into four regions or zones :

- (i) Northern,
- (ii) Bombay,
- (iii) Madhya Pradesh & Rajasthan, and
- (iv) Southern.

The table below gives the zonal break-up of the sample factories *vis-a-vis* the total number in each zone as also the average capacity (worked per day) of the sample factories *vis-a-vis* that of all factories in the respective zones :

TABLE X.1—*Particulars of Tariff Commission Zones*

| zone | number of factories | | average worked capacity per day in tons | |
|---|---|---|---|---|
| | all factories | sample factories | all factories | sample factories |
| (1) | (2) | (3) | (4) | (5) |
| Northern . . . . . . . . | 102 | 33 | 1,117 | 1,181 |
| Bombay . . . . . . . | 21 | 6 | 893 | 943 |
| Madhya Pradesh and Rajasthan . . | 8 | 3 | 596 | 750 |
| Southern . . . . . . . . | 20 | 6 | 1,026 | 1,196 |
| | 151* | 48 | 1,046 | 1,126 |

*6 factories which were either not working or were in the experimental stage have been omitted.

1.4. By and large, the average capacity for sample factories was slightly higher than the average capacity for all factories in the respective zones. The average capacity of all the sample factories came to 1,126 tons against 1,046 tons for all factories. The regional cost schedules were ultimately based on the costs relating to 45 factories since two factories in the Southern zone and one in the Bombay zone were excluded due to certain abnormal features. Regional schedules were developed for a uniform recovery of 10 per cent for durations ranging from 90 days to 180 days for the Northern and Madhya Pradesh & Rajasthan zones, 110 days to 200 days for the Bombay zone and 90 to 200 days for the Southern zone. The schedule of manufacturing charges included, besides the 'above material cost', certain items of expenses like transport charges, development expenses, outstation expenses, etc.

1.5. The cost schedules recommended by the Tariff Commission in its 1959 report were amended in 1961 when Government asked it to suggest a price linking formula. In the amended schedules, the Tariff Commission took into account, *inter alia,* the implementation of the Wage Board Award during the 1960-61 season.

*2. Sample for the present Cost Survey*

2.1. Out of the 194 factories in production during December, 1964, a sample of 58 factories was selected for cost examination with due regard to the following:

(i) capacity,
(ii) process of clarification,
(iii) type of organisation,
(iv) age of the factory, and
(v) location.

The views of the various interests concerned were sought before the sample was finalised. Brief particulars of the sample factories are given in Appendix VII. Appendices VIII to XII give the position of the sample factories compared to all factories in respect of the criteria mentioned above. The table below gives the representative character of the sample of 58 factories with reference to capacity:

TABLE X.2—*Relative Position of Sample Factories*

| capacity (in tonnes) | capacity | | no. of factories | | average capacity (in tonnes) | |
|---|---|---|---|---|---|---|
| | per cent of all factories | per cent of sample factories | per cent of all factories | per cent of sample factories | all factories | sample factories |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| upto 1000 . . | 47·0 | 44·0 | 62·9 | 8·6 | 831 | 878 |
| 1001—1500 . . | 30·6 | 33·8 | 26·8 | 31·1 | 1270 | 1278 |
| above 1500 . . | 22·4 | 22·2 | 10·3 | 10·3 | 2418 | 2508 |
| total . . | 100·0 | 100·0 | 100·0 | 100·0 | 1112 | 1171 |

From the information given in the above table and the appendices, it would appear that the sample is fairly representative of the industry as a whole.

### 3. *Financial Analysis*

3.1. An analysis of the working results of the sample factories shows that their gross percentage return on capital employed was 12·99 in 1961-62, 13·56 in 1962-63 and 15·69 in 1963-64. This compares favourably with the return of 12 per cent allowed by the Tariff Commission.

3.2. It appears that under the present scheme of price fixation the industry has, on the whole, fared well and prudent managements have had an opportunity of increasing their capacity, gross block and reserves as may be seen from the table below :

TABLE X.3—*Comparative Analysis of Balance Sheet**

| particulars | year 1958-59 | year 1963-64 | increase over 1958-59 | percentage increase in 1963-64 over 1958-59 |
|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) |
| rated capacity (tonnes) . . . . | 47797 | 56357 | 8560 | 17·91 |
| gross block (Rs. lakhs) . . . . . | 4502·01 | 5959·15 | 1457·14 | 32·37 |
| net worth (Rs. lakhs) . . . . | 2432·32 | 3439·52 | 1007·20 | 41·41 |
| reserve & provision including balance of P & L account (Rs. lakhs) . . . | 1053·21 | 1690·84 | 637·63 | 60·54 |

*Based on 44 out of 58 sample factories for which comparable data were available.

### 4. *De-limitation of Zones*

4.1. The representatives of the State Governments and the sugar industry submitted detailed memoranda on the various problems confronting the industry and also tendered oral evidence. These related, *inter alia*, to zones and cost schedules. There was considerable divergence in the views expressed by these representatives.

4.2. Some State Governments stated that the Northern zone as recommended by the Tariff Commission was too large with wide disparities in costs with the result that a uniform price for the zone resulted in large differences in profit margins. The division of U.P. into five zones and of Bihar into two zones for the fixation of ex-factory price of sugar should, therefore, be continued. Certain other State Governments were of the view that eventually one uniform all-India price should be evolved, the present policy of Government had resulted in the proliferation of zones, to as many as twenty-two, which was not conducive to efficiency in the industry. Similar divergent views were expressed by representatives of the sugar industry also.

4.3. In its interim report, the Commission had discussed the issue of proliferation of zones. As against the four zones recommended by the Tariff Commission, Government has gradually increased the number to twenty-two. The Commission had stated: "each zone should be large enough to ensure that the principle of price fixation does not degenerate into a 'cost plus' basis as the latter discourages efficiency and perpetuates inefficiency. The number of zones should, as far as possible, be near to that recommended by the Tariff Commission. In view, however, of certain changes which have taken place in respect of recovery, duration of crushing season, etc., since the Tariff Commission reported, an outright reversion to the same composition of zones as was recommended by the Tariff Commission may result in combining units with wide differences in respect of these factories into the same zone". The Commission, therefore, made the following interim recommendation for 1964-65:

"*Zone No. I*: Uttar Pradesh (except Meerut, Muzaffarnagar and Bulandshahr districts), North Bihar, West Bengal and Orissa;

*Zone No. II*: Meerut, Muzaffarnagar and Bulandshahr districts of Uttar Pradesh, Punjab, Rajasthan, Madhya Pradesh and South Bihar;

*Zone No. III*: Maharashtra and Gujarat;

*Zone No. IV*: Mysore, Andhra Pradesh, Madras, Kerala and Pondicherry.

Assam may be treated as a special case in view of its geographical position and other difficulties.

These zones may be treated as provisional and may be reconstituted in the light of the results of certain cost accounting and other studies which the Commission proposes to undertake".

4.4. The Sugarcane Breeding Institute, Coimbatore, has divided the whole country into five regions on the basis of agro-climatic and other considerations, details of which are given in Chapter IV:

*Region A*: Gujarat, Maharashtra, North Mysore, North Andhra Pradesh and South Madhya Pradesh;

*Region B*: Kerala, South Mysore, Madras, Pondicherry, rest of Andhra Pradesh and Orissa;

*Region C*: Bihar, Uttar Pradesh (barring the terai area all along Uttar Pradesh and Bihar), South Punjab, Rajasthan and North Madhya Pradesh;

*Region D*: Terai areas of Uttar Pradesh and Bihar, and North Punjab;

*Region E*: West Bengal and Assam.

4.5. An analysis of the comparative economic advantage of growing sugarcane and its competing crops in different parts of the country has been attempted in Chapter IV. The broad conclusions that emerge from that analysis also broadly confirm the scheme of zoning as suggested by the Coimbatore Institute.

4.6. Apart from considerations relating to agro-climatic factors and comparative economic advantage, it is worthwhile to consider the variations in duration of crushing and sugar recovery also. On this basis, some revision in the zones, as suggested by the Coimbatore Institute, appears to be necessary. For instance, the average duration and recovery of the factories in the terai region, grouped under Region D above, come to 153 and 9·50 per cent whereas the average duration and recovery of factories in U.P., barring factories in the western districts, and North Bihar come to 145 and 9·59 per cent respectively. Similarly, the average duration and recovery of the factories in the entire Punjab come to 147 and 8·76 per cent and those for the factories in Meerut, Muzaffarnagar and Bulandshahr districts of West Uttar Pradesh come to about 147 and 9·14 per cent respectively. Again, on the basis of average duration and recovery, Rajasthan and Madhya Pradesh seem to have features similar to those of Punjab and the above three districts of West Uttar Pradesh. So also, West Bengal has got similar features as those of East Uttar Pradesh and Bihar. On the other hand, the average duration and recovery of the factories located in Central and the rest of West Uttar Pradesh are about the same and significantly different from those in the three districts of the West Uttar Pradesh and Punjab in the west and East Uttar Pradesh and Bihar in the east.

4.7. On the basis of the above considerations, the Commission recommends the following five zones for the purpose of fixation of ex-factory prices of sugar:

*Zone I*: Gujarat Maharashtra, North Mysore and North Andhra Pradesh;

*Zone II*: Orissa, rest of Andhra Pradesh, South Mysore, Madras, Pondicherry and Kerala;

*Zone III*: Meerut, Muzaffarnagar and Bulandshahr districts of West Uttar Pradesh, Punjab, Rajasthan and Madhya Pradesh;

*Zone IV*: Central and rest of West Uttar Pradesh; and

*Zone V*: East Uttar Pradesh, Bihar and West Bengal.

Assam may be treated as a zone by itself on account of its location. It may be observed incidentally that there is a broad similarity between the zones as recommended now and those suggested in the interim report, the minor differences being adjustments for additional economic and agro-climatic considerations.

4.8. When the potentialities of sugarcane development from agro-climatic point of view are appropriately exploited in future through research and development works like irrigation, drainage, it should be possible to reclassify the sugar producing areas in the country into five regions as suggested by the Sugarcane Breeding Institute, Coimbatore. Till then, the zones recommended in the preceding para may be adopted for price fixation.

### 5. *Preparation of Cost Schedules*

5.1. Detailed cost proformae were sent to all the 194 factories with a request to complete the same for the last three crushing seasons, namely 1961-62, 1962-63 and 1963-64. Many of them did not submit the information in time. In spite of the fact that there have been previous investigations into the cost structure of this industry by the Tariff Commission and earlier by two other committees, it was found that the accounts kept by different factories still left much to be desired and were not such as would enable compilation of data on a uniform basis. The collection of and subsequent correction and collation of data was found to be particularly difficult and time consuming in cases where the companies were having other activities in addition to the manufacture of sugar. In regard to factories which were manufacturing white and raw sugar, segregation of costs was not attempted. There was no evidence of any conscious attempt to arrive at even an approximate cost of production of the two different types of sugar. In quite a few cases, it was found that the companies did not follow any orthodox cost accounting principle in the matter of allocation of common expenses to activities other than sugar. After an on-the-spot examination of the books of accounts of these companies, cost of production of sugar manufactured during the season 1963-64 was worked out. The expenses incurred by the factories under the respective elements of cost during the two preceding crushing seasons were also examined to see that the costs for 1963-64 did not include any abnormal elements. These cost statements were sent to the companies with a request to send their observations, if any. They were also invited to meet one of the members authorised by the Commission for discussion on their respective costs and related matters. In the light of the discussions and representations, the works cost of production of white and raw sugar manufactured during the season 1963-64 was calculated. In checking the data, the available information for certain important items for all the factories which submitted returns, was also kept in view.

### 6. *Future Increases*

6.1. The need for a revision of the cost schedules has been stressed by the representatives of the State Governments and the industry. It has been stated that the cost schedules are based on conditions obtaining seven or eight years back since when there have been increases in the prices of stores and raw materials, wages & salaries and other items. Some of the representatives have stated that, for purposes of depreciation, the present market value of the plant should be taken into consideration. They have also expressed the view that provision should be made for a rehabilitation allowance in the ex-factory price of sugar for factories having old plants. Some other representatives, however, have stated that the problem of rehabilitation allowance should be treated as a separate issue to be analysed on the merits of each region and, possibly, for each unit so that the distortion of the cost structure in the different zones may be avoided. These representatives have further stated that effective utilisation of available capacities and higher productivity of individual factories should receive adequate consideration in the fixation of ex-factory price of sugar. Most of the representatives, particularly of State Governments, have represented that due note of additional expenditure incurred on transport should be taken in preparing the cost schedules. The above views have been carefully considered and appropriate adjustments made by the Commission.

6.2. Before the preparation of cost schedules, the 'above material cost' (*i.e.*, the total cost less basic cost of cane and extra cost on cane) relating to each of the 58 sample factories, was adjusted to take note of the increases that have taken place and the probable increases that are likely to take place in future. For example, charges for power were corrected to take note of the revision in the tariffs or electricity duty, as the case might be, as also the cost of fuels such as coal and oil. As regards salaries and wages, besides making provision for annual normal increments, adjustments for increase in dearness allowance due to increase in the all-India working class cost of living index from 123 in 1963-64 to 160 had also been made on the basis of the Wage Board award. Provision for gratuity was made on the basis of statutory liability in place of actual payments. For items such as general stores, chemicals, repairs and maintenance stores, overhead and packing, adequate provision was made over the level of expenditure incurred during 1963-64. It was not possible to determine with reasonable accuracy the probable future additions to fixed block by the sample factories. So far as depreciation is concerned, the incidence during 1963-64 was extended for future on the assumption that any increase in depreciation due to routine additions to fixed assets would be neutralised by the reduction in the quantum of depreciation.

6.3. Certain assumptions were made in calculating the cost for each factory for different durations indicated in the schedules.

6.4. Power and fuel requirements of a factory are met from bagasse obtained as a by-product and normally no extra fuel is needed. Small quantities of other fuels such as coal, wood or oil are, however, used at the commencement of, and sometimes during, the season by some factories. During the off-season, factories either purchase power or generate power by using other fuels. The incidence of these additional fuels, is, however, not considerable. Power for season and off-season was segregated and power consumed during the respective periods was adjusted in direct proportion to the length of the respective seasons. Stores, chemicals, packing, credits for molasses, bagasse, etc., were also treated as directly variable with production. Salaries of permanent staff were treated as fixed, and of seasonal staff variable. Retainer allowance including proportionate share of provident fund to seasonal staff varied in direct proportion to the number of off-season days. Overheads included certain items which were variable and certain others which were fixed. After taking the relevant factors into consideration, the Commission decided that in the circumstances it would be reasonable to treat 25 per cent of the total expenditure on overheads as variable and 75 per cent fixed irrespective of the length of the crushing season. Depreciation was calculated at normal income-tax rates. The incidence of the second shift allowance was treated as directly variable with the length of the crushing season and the incidence for the normal shift was treated as a fixed charge.

6.5. Although the Commission has recommended an increase of 50 per cent in the price of molasses, credit was taken only at current rates; the margin left should be utilised for providing proper storage facilities for molasses.

## 7. *Extra Cost on Cane*

7.1. Items included under this head are:

(i) Purchase tax, and/or cess,
(ii) Commission of co-operative societies,
(iii) Development expenses including expenses on staff,
(iv) Transport charges,
(v) Driage, and
(vi) Other expenses.

7.2. *Purchase tax.*—There is no uniformity in the levy of purchase tax or cess in the different states, as will be seen in Statistical Table IV.1. The purchase tax in Mysore is out of line with that in the neighbouring states. It is desirable that the purchase tax in different states should be more or less uniform.

7.3. *Commission to co-operative societies and developmental expenses.*—It was noticed that wherever such commission was paid the expenditure on development and developmental staff was low. Probably this commission, to a large extent, obviated the need for individual factories taking upon themselves development work and employing staff of their own at the outstations. The Commission has, therefore, considered these two together.

7.4. *Transport charges.*—Currently, the sugar factories are allowed to make a deduction from the minimum price of sugarcane purchased by them at outstation centres. This amount is supposed to cover transport cost by road upto a distance of 13 kilometres. The quantity of sugarcane transported from distances beyond 13 kilometres varied from 6·7 to 56·7 per cent from one zone to another, the all-India average being 30·8 per cent. The factories, therefore, incur additional expenses because they have to transport a certain proportion of cane from longer distances. The Commission is of the view that the factories should be compensated, to some extent, for the additional transport costs actually incurred by them. This compensation should be limited with a view to discouraging factories from drawing sugarcane from very long distances, the reason being that haulage of cane from long distance involves loss of sugar due to greater driage of cane. The Commission, therefore, has allowed a certain margin in ex-factory price of sugar by way of transport expenses on that portion of the cane supply which is transported from distances beyond 13 kilometres in different zones.

7.5. In this context, it may be mentioned that, in some states where there are no outstation purchase-centres, no allowance is made, for the purpose of calculation of income-tax, for the extra cost incurred on transport of cane by factories from the fields of the farmers. The Commission is of the view that no distinction should be made between purchases of cane by the outstation-centres and purchase ex-field. This is necessary also because of another consideration, *i.e.*, of encouraging factories themselves to arrange for transport of cane which would help reduce the time-interval between harvesting of cane and its crushing at the factory. The Commission, therefore, recommends that even where there are no outstation purchase-centres, no distinction should be made between purchases of cane from outstation-centres and those from the fields of the farmers for purposes of income-tax.

7.6. The loss due to driage allowed for in the schedule relates to the incidence borne only by the factory and not that borne by the cultivator. Other expenses include octroi, outstation expenses, etc.

## 8. *Selling Expenses and Adjustment for Grade Differentials*

8.1. The unit incidence for selling expenses for the season 1963-64 have been projected for the future.

8.2. In para 15.3, the Commission has taken the view that premium for bold grain sugar should not be allowed. The extras due to grade differentials have been calculated on the basis of the 1964-65 pattern of production. In the schedules, 90 per cent of the amount so arrived at has been indicated.

As the actual incidence of emergency risk insurance is not known, no provision has been made for this in the schedules. Suitable adjustment has to be made for this before notifying the prices.

10. *Contingency*

10.1. The Commission recommends that, in addition to what has been provided in the schedules, a contingency allowance of 50 paise per quintal of sugar may be added to the ex-factory prices uniformly for both white and raw sugar in all the zones.

11. *Escalation*

11.1. *Variations in dearness allowance.*—The representatives of the industry urged that the schedules should provide for the adjustment of dearness allowance in future. The Commission is of the view that there is some force in the representation of the industry, especially as wages and salaries form a substantial proportion of the cost of manufacture. It has, therefore, provided for this adjustment for every complete 10 points in the all-India working class cost of living index number.

11.2. The industry has also asked for escalation in regard to certain other items of cost which the Commission has not found feasible to provide. The Commission feels that the provision for contingency and certain other cushions which has been made should be sufficient.

11.3. The cost schedules prepared by the Commission should be in force for a period of five years ending October, 1970 subject to adjustments, whenever called for, for variations consequent upon governmental action.

12. *Claim for an Allowance to cover Loss on Sale of Damaged Sugar*

Some representatives of the industry pleaded for an allowance for damaged and under-grade sugar, and for deterioration of sugar in storage. Under-grade or damaged sugar is normally re-melted and, usually, the gunny bags used once have to be discarded as these are not permitted to be re-used. The cost of re-melting sugar and of gunny bags has been provided for in the cost schedules and no separate provision is, therefore, necessary.

13. *Duration of Crushing Season*

13.1. The schedules of manufacturing and other charges have been prepared for durations indicated below:

| zone | minimum duration | maximum duration |
|---|---|---|
| I | 110 | 180 |
| II | 90 | 200 |
| III | 90 | 180 |
| IV | 90 | 180 |
| V | 90 | 180 |

In developing the zonal cost schedule in regard to zones I, III, IV and V, it has been assumed that the quantity of cane crushed per day will fall by 10 per cent during the interval from 160 days to 170 days, and by

20 per cent during the interval from 170 days to 180 days. Similar allowance has been made in regard to zone II but it has been assumed that the quantum of cane crushed per day will fall by 10 per cent during the interval from 180 days to 190 days and by 20 per cent during the interval from 190 days to 200 days.

### 14. *Schedules for White Sugar*

14.1. The zonal schedules show the average manufacturing and other costs of all the factories in a zone for different number of crushing days. The weighted average manufacturing charges of all the factories within a zone were taken in working out the schedule. The weighted average costs for the durations of 90 days, 100 days, etc., were worked out for three capacity groups, *viz.*, upto 1,000 tonnes, 1,001 to 1,500 tonnes and above 1,500 tonnes per day. Assuming that the cost for the sample factories in each capacity group will hold good for all factories as well, in the concerned group, due weightage was given for the actual capacity in each group and the weighted average cost for all the groups was obtained for different durations at 10 per cent recovery. No separate schedule has been prepared for Assam as there is only one factory in that state. The ex-factory price for Assam should be fixed on the basis of the price fixed for Zone V plus the average cost of transport from a suitable railway point in north Bihar to the factory site in Assam.

14.2. The schedules of manufacturing cost (including extra cost on one), packing, etc., per quintal of sugar for the five zones, based on 10 per cent recovery, for different durations are given in Tables X.4A to X.4E.

14.3. *Testing the Schedules.*—A comparison of the manufacturing expenses of the individual factories with the prices derived from the schedules, has been made with a view to verifying the reasonableness of the prices calculated on the basis of the schedules. For this purpose, deviation of conversion charges has been determined for each of the factories within a zone and compared with those obtained from the schedules. The factory-wise differences were weighted and appropriate statistical tests were applied. The average differences were not found to be statistically significant.

### 15. *Demand for High Cost for Carbonation Factories and Premium for Bold Grain Sugar*

15.1. It was represented to the Commission that the cost of production of sugar in factories working on carbonation process is higher than that of those working on sulphitation process. It was also mentioned that the investment in fixed block was higher for carbonation factories. It was further represented that till recently the carbonation factories were compensated for the higher cost by the premia allowed for the Bold Grain Sugar.

TABLE X. 4A—*Schedule of Cost of Manufacture (excluding basic cost of cane) for future per Quintal of White Sugar (Grade D-29) for Zone I based on 10 per cent Recovery*

(Rs. per quintal)

| number of working days on the basis of 22 crushing hours | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
|---|---|---|---|---|---|---|---|---|
| 1. cost excluding basic cost of cane including extra cost on cane . | 33·49 | 31·74 | 30·25 | 28·97 | 27·88 | 26·90 | 26·24 | 25·61 |
| 2. packing . . . . . . | 2·03 | 2·03 | 2·03 | 2·03 | 2·03 | 2·03 | 2·03 | 2·03 |
| 3. grade differential . . . | (—)1·04 | (—)1·04 | (—)1·04 | (—)1·04 | (—)1·04 | (—)1·04 | (—)1·04 | (—)1·04 |
| 4. selling expenses . . . | 0·15 | 0·15 | 0·15 | 0·15 | 0·15 | 0·15 | 0·15 | 0·15 |
| total . . | 34·63 | 32·88 | 31·39 | 30·11 | 29·02 | 28·04 | 27·38 | 26·75 |
| dearness allowance escalation for 10 points . . . . . | 0·41 | 0·38 | 0·35 | 0·33 | 0·31 | 0·29 | 0·28 | 0·27 |

TABLE X.4B—*Schedule of Cost of Manufacture (excluding basic cost of cane) for future per Quintal of White Sugar (Grade D-29) for Zone II based on 10 per cent Recovery*

(Rs. per quintal)

| number of working days on the basis of 22 crushing hours | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 190 | 200 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. cost excluding basic cost of cane but including extra cost on cane | 32·02 | 29·94 | 28·23 | 26·82 | 25·63 | 24·60 | 23·71 | 22·93 | 22·23 | 21·63 | 21·16 | 20·81 |
| 2. packing . . . . . | 1·94 | 1·94 | 1·94 | 1·94 | 1·94 | 1·94 | 1·94 | 1·94 | 1·94 | 1·94 | 1·94 | 1·94 |
| 3. grade differential . . . | (—)0·23 | (—)0·23 | (—)0·23 | (—)0·23 | (—)0·23 | (—)0·23 | (—)0·23 | (—)0·23 | (—)0·23 | (—)0.23 | (—)0·23 | (—)0·23 |
| 4. selling expenses . . . | 0·25 | 0·25 | 0·25 | 0·25 | 0·25 | 0·25 | 0·25 | 0.25 | 0·25 | 0·25 | 0·25 | 0·25 |
| total . . | 33·98 | 31·90 | 30·19 | 28·78 | 27·59 | 26·56 | 25·67 | 24·89 | 24·19 | 23·59 | 23·12 | 22·77 |
| dearness allowance escalation for 10 points . . . . . . | 0·49 | 0·45 | 0·41 | 0·38 | 0·36 | 0·34 | 0·32 | 0·30 | 0·29 | 0·27 | 0·26 | 0·26 |

TABLE X.4 C—*Schedule of Cost of Manufacture (excluding basic cost of cane) for future per Quintal of White Sugar (Grade D-29) for Zone III based on* 10 *per cent Recovery*

(Rs. per quintal)

| number of working days on the basis of 22 crushing hours | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. cost excluding basic cost of cane but including extra cost on cane . . . . . | 29·38 | 27·94 | 26·77 | 25·78 | 24·94 | 24·24 | 23·63 | 23·08 | 22·70 | 22·41 |
| 2. packing . . . . . | 1·97 | 1·97 | 1·97 | 1·97 | 1·97 | 1·97 | 1·97 | 1·97 | 1·97 | 1·97 |
| 3. grade differential . . . . | (—)1·22 | (—)1·22 | (—)1·22 | (—)1·22 | (—)1·22 | (—)1·22 | (—)1·22 | (—)1·22 | (—)1·22 | (—)1·22 |
| 4. selling expenses . . . . | 0·10 | 0·10 | 0·10 | 0·10 | 0·10 | 0·10 | 0·10 | 0·10 | 0·10 | 0·10 |
| total . . | 30·23 | 28·79 | 27·62 | 26·63 | 25·79 | 25·09 | 24·48 | 23·93 | 23·55 | 23·26 |
| dearness allowance escalation for 10 points . . . . | 0·44 | 0·42 | 0·40 | 0·38 | 0·37 | 0·36 | 0·35 | 0·34 | 0·33 | 0·33 |

(Rs. per quintal)

| number of working days on the basis of 22 crushing hours | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. cost excluding basic cost of cane but including extra cost on cane . . . . . | 30·11 | 28·47 | 27·30 | 26·25 | 25·36 | 24·60 | 23·93 | 23·36 | 22·92 | 22·60 |
| 2. packing . . . . . | 1·86 | 1·86 | 1·86 | 1·86 | 1·86 | 1·86 | 1·86 | 1·86 | 1·86 | 1·86 |
| 3. grade differential . . | (—)1·10 | (—)1·10 | (—)1·10 | (—)1·10 | (—)1·10 | (—)1·10 | (—)1·10 | (—)1·10 | (—)1·10 | (—)1·10 |
| 4. selling expenses . . . . | 0·25 | 0·25 | 0·25 | 0·25 | 0·25 | 0·25 | 0·25 | 0·25 | 0·25 | 0·25 |
| total . | 31·12 | 29·48 | 28·31 | 27·26 | 26·37 | 25·61 | 24·94 | 24·37 | 23·93 | 23·61 |
| Dearness allowance escalation for 10 points . . . . | 0·36 | 0·33 | 0·31 | 0·29 | 0·28 | 0·26 | 0·25 | 0·24 | 0·23 | 0·23 |

**Table X. 4 E**—*Schedule of Cost of Manufacture (excluding basic cost of cane) for future per Quintal of White Sugar (Grade D-29) for Zone V based on 10 per cent Recovery*

(Rs. per quintal)

| number of working days on the basis of 22 crushing hours | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. cost excluding basic cost of cane but including extra cost on cane | 30·91 | 29·40 | 28·18 | 27·16 | 26·30 | 26·55 | 24·91 | 24·35 | 23·94 | 23·65 |
| 2. packing . . . . | 1·86 | 1·86 | 1·86 | 1·86 | 1·86 | 1·86 | 1·86 | 1·86 | 1·86 | 1·86 |
| 3. grade differential . . | (—)0·97 | (—)0·97 | (—)0·97 | (—)0·97 | (—)0·97 | (—)0·97 | (—)0·97 | (—)0·97 | (—)0·97 | (—)0·97 |
| 4. selling expenses . . . | 0·25 | 0·25 | 0·25 | 0·25 | 0·25 | 0·25 | 0·25 | 0·25 | 0·25 | 0·25 |
| total . . | 32·05 | 30·54 | 29·32 | 28·30 | 27·44 | 26·69 | 26·05 | 25·49 | 25·08 | 24·79 |
| dearness allowance escalation for 10 points . . . | 0·47 | 0·43 | 0·41 | 0·38 | 0·37 | 0·35 | 0·33 | 0·32 | 0·31 | 0·31 |

15.2. The records maintained by the factories did not admit of an even reasonably approximate calculation of the extra cost of production of either the carbonation process or of the Bold Grain Sugar for which premia were permissible. Even within a region, the cost of production of factories of comparable sizes employing identical process was not always the same. Hence from a mere review of the figures of cost of production, it would be difficult to say that factories employing carbonation process, in fact, produce sugar at a higher cost. Costs need not be high merely for the reason of the process involved. It is also attributable to several other factors such as efficiency, managerial ability, age of plant, availability and quality of cane, etc. The difference in process is but one element in the variations in cost between factories in any region. It is difficult to isolate the incidence of extra cost attributable to difference in process alone. Moreover, there are factories employing sulphitation process whose costs are higher than those of the carbonation factories. In a scheme of price fixation, where the costs of the representative sample of factories in a zone are taken into account, there should not be any special hardship for factories working on carbonation process. The carbonation factories are understood to have a recovery higher by about 0·2 per cent than that obtained by the sulphitation factories due to better classification. The extra return enjoyed by the carbonation factories on this account should off-set extra cost on account of clarificants, labour charge, depreciation on extra investment, etc. The Commission, therefore, feels that there is no need for separate prices for factories working on carbonation process.

15.3. The Commission has been asked to examine whether it costs more to produce sugar of A & B Grades and, if so, to what extent in April, 1942, price differentials for various grades of sugar on the basis of quality were prescribed for the first time by Government. Since then the differentials have been revised from time to time. There has been a substantial increase in the differentials from the year 1950. The pattern of increase in the differentials has been as under :

| | (paise per quintal) | |
|---|---|---|
| average differential for improvement by one stage | 1950 | 1958 |
| (*i*) for colour improvement (from 27 to 28, 28 to 29, etc.) | 46 | 94 |
| (*ii*) for grain size improvement (from E to D, D to C, C to B and B to A) . . . . . . . . . | 46 | 128 |
| (*iii*) for bold grains (from C to B and B to A) . . . | 54 | 182 |

The production of bold grain sugar has been receiving an encouragement from these price differentials. Whereas the sugar in the next superior colour series fetched on an average 94 paise more in 1958 as against 46 paise more in 1950, that in the next superior grain size fetched 182 paise for bold grain in 1958 against 54 paise in 1950. This resulted in a shift of production from medium grain to bold grain not only in carbonation but also in sulphitation factories.

15.4. By the notification dated November 2, 1964, Government banned the manufacture of A & B Grades of sugar. Subsequently the ban was withdrawn but the factories were not allowed any premium for

A & B Grades. It was represented by a section of the industry to the Commission that a switch-over to the production of smaller grain would have adverse repercussions on the production of factories producing such sugar. The Commission is advised by technical experts that the ban on the manufacture of A & B Grades of sugar would not result in loss of production. On the other hand, it may lead to an increase in sugar output. The Commission, therefore, does not recommend any premium for A & B Grades of sugar.

## 16. *Return*

16.1. The Tariff Commission, in its last inquiry, recommended a return at 12 per cent on capital employed. In doing so, it took into consideration factors such as the dependence of the industry on an agricultural raw material, the supply of which is affected by several imponderables, *e.g.*, weather and pests and diseases. A number of factories located in favourable regions have made ample profits. In fact, the sample factories earned as much as 15·69 per cent in 1963-64 as has been mentioned in para 3.1. Sizeable expansions in capacity have taken place. The Commission is satisfied that the rate of return of 12 per cent is not unreasonable and should encourage expansion of the industry. The Commission is aware that the rate of return indicated will not be realised by each individual unit in each zone. Majority of the units in a zone, however, should be able to earn this return if they maintain a reasonable degree of efficiency. The method followed by the Commission in assessing the working capital is the same as was adopted by the Tariff Commission in its 1959 Inquiry.

## 17. *Ex-factory Selling Price for White Sugar*

17.1. The schedules given in para 14.2 are for a notional uniform recovery of 10 per cent for white sugar. In actual practice, however, the duration and recovery may vary from year to year in the same zone. The ex-factory selling price in each zone will have to be determined annually with reference to the actual duration and recovery. The basic cost of cane and the margin of profit will have to be added to arrive at the ex-factory price. It may be reiterated that in applying the schedules, packing charges, grade differentials and selling expenses should be kept constant per quintal of sugar irrespective of recovery percentage while other items of cost should be adjusted in inverse proportion to the recovery percentage.

17.2. Table X. 5 gives the fair ex-factory price per quintal of white sugar (Grade D-29) for each zone on the basis of actual recovery and duration pertaining to 1963-64 crushing season.

17.3. By way of illustration, the schedules have been applied to the actual recovery and duration in 1964-65 for different zones on the basis of a minimum sugarcane price of (i) Rs. 5·36 per quintal for recovery upto 10·4 per cent and (ii) Rs. 4·96 per quintal for recovery upto 9·4 per cent, subject to a premium of 4 paise per quintal for an increase of 0·1 point recovery over the respective levels and (iii) Rs. 4·82 per quintal for recovery upto 9·0 per cent and 5·36 paise per quintal for an increase of 0·1 point recovery over the minimum. The results are given in Table X.6. It will be seen that the inter-zonal differences in ex-factory costs (and prices) become appreciably less as the level of recovery associated with the minimum price of cane is lowered.

TABLE X. 5—*Fair Ex-factory Price per Quintal of White Sugar (Grade D-29) for 1963-64*

| | zone I | zone II | zone III | zone IV | zone V |
|---|---|---|---|---|---|
| average capacity (tonnes) | 1228 | 1043 | 1546 | 1708 | 1082 |
| average crushing days | 145 | 134 | 119 | 157 | 97 |
| average recovery percent | 11·71 | 9·72 | 8·65 | 9·48 | 9·94 |

(Rs. per quintal)

| Sl. no./item<br>(1) | zone I<br>(2) | zone II<br>(3) | zone III<br>(4) | zone IV<br>(5) | zone V<br>(6) |
|---|---|---|---|---|---|
| 1. raw materials—basic cost of cane | 55·18 | 54·29 | 63·57 | 57·13 | 54·01 |
| 2. conversion charges including extra cost on cane | 23·61 | 25·11 | 29·07 | 22·15 | 27·89 |
| 3. packing charges | 1·89 | 1·76 | 1·79 | 1·76 | 1·75 |
| 4. adjustment for extras due to grade differential | (—)1·66 | (—)0·26 | (—)2·26 | (—)1·79 | (—)1·80 |
| 5. selling expenses | 0·15 | 0·22 | 0·08 | 0·26 | 0·24 |
| 6. excise duty | 28·65 | 28·65 | 28·65 | 28·65 | 28·65 |
| 7. return | 8·81 | 10·03 | 9·83 | 5·80 | 7·09 |
| 8. fair ex-factory price | 116·63 | 119·85 | 130·73 | 113·96 | 117·83 |

TABLE X. 6—*Ex-factory Price of White Sugar (Grade D-29) for 1904-65 derived from Cost Schedules given in the Report and Actual Recovery and Duration in 1964-65*

(Rs. per quintal)

| | zone I | | | zone II | | | zone III | | | zone IV | | | zone V | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| average recovery/average crushing days | 11·44/156 | | | 9·30/157 | | | 8·32/117 | | | 9·29/167 | | | 9·53/151 | | |
| | A | B | C | A | B | C | A | B | C | A | B | C | A | B | C |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) |
| 1. conversion charges including extra cost on cane | 23·85 | 23·85 | 23·85 | 24·90 | 24·90 | 24·90 | 31·35 | 31·35 | 31·35 | 24·78 | 24·78 | 24·78 | 26·08 | 26·08 | 26·08 |
| 2. less grade differential | −1·04 | −1·04 | −1·04 | −0·23 | −0·23 | −0·23 | −1·22 | −1·22 | −1·22 | −1·10 | −1·10 | −1·10 | −0·97 | −0·97 | −0·97 |
| 3. net conversion charges etc. | 22·81 | 22·81 | 22·81 | 24·67 | 24·67 | 24·67 | 30·13 | 30·13 | 30·13 | 23·68 | 23·68 | 23·68 | 25·11 | 25·11 | 25·11 |
| 4. packing | 2·03 | 2·03 | 2·03 | 1·94 | 1·94 | 1·94 | 1·97 | 1·97 | 1·97 | 1·86 | 1·86 | 1·86 | 1·86 | 1·86 | 1·86 |
| 5. total (3+4) | 24·84 | 24·84 | 24·84 | 26·61 | 26·61 | 26·61 | 32·10 | 32·10 | 32·10 | 25·54 | 25·54 | 25·54 | 26·97 | 26·97 | 26·97 |
| 6. cane cost | 50·37 | 50·37 | 53·41 | 57·63 | 53·31 | 53·60 | 64·42 | 59·59 | 58·12 | 57·70 | 53·37 | 53·60 | 56·24 | 52·59 | 55·12 |
| 7. total including cane cost (5+6) | 75·21 | 75·21 | 78·25 | 84·24 | 79·92 | 80·21 | 96·52 | 91·69 | 90·22 | 83·24 | 78·91 | 79·14 | 83·21 | 79·56 | 82·09 |
| 8. return | 8·59 | 8·59 | 8·74 | 9·18 | 8·97 | 8·98 | 10·04 | 9·78 | 9·69 | 6·30 | 6·09 | 6·10 | 5·74 | 5·56 | 5·69 |
| 9. selling expenses | 0·15 | 0·15 | 0·15 | 0·25 | 0·25 | 0·25 | 0·10 | 0·10 | 0·10 | 0·25 | 0·25 | 0·25 | 0·25 | 0·25 | 0·25 |
| 10. contingencies | 0·50 | 0·50 | 0·50 | 0·50 | 0·50 | 0·50 | 0·50 | 0·50 | 0·50 | 0·50 | 0·50 | 0·50 | 0·50 | 0·50 | 0·50 |
| 11. excise duty | 28·65 | 28·65 | 28·65 | 28·65 | 28·65 | 28·65 | 28·65 | 28·65 | 28·65 | 28·65 | 28·65 | 28·65 | 28·65 | 28·65 | 28·65 |
| 12. total ex-factory price | 113·10 | 113·10 | 116·29 | 122·82 | 118·29 | 118·59 | 135·81 | 130·72 | 129·16 | 118·94 | 114·40 | 114·64 | 118·35 | 114·52 | 117·18 |

TABLE X.6—*Ex-factory Price of White Sugar (Grade D-29) for 1964-65 derived from Cost Schedules given in the Report and Actual Recovery and Duration in 1964-65*—contd.

(Rs. per quintal)

| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| selling prices per quintal of sugar D-29 based on notification dated August 6, 1965. | Rs. 116·00<br>Rs. 118·75 | | | Rs. 123·00<br>Rs. 120·75<br>Rs. 118·75<br>Rs. 116·00 | | | Rs. 135·00<br>Rs. 129·25<br>Rs. 124·50 | | | Rs. 127·00<br>Rs. 118·75<br>Rs. 116·00 | | | Rs. 118·75 | | |

A—Cost on the basis of cane cost @ Rs. 2/- per maund upto 10·4% recovery and 1·5 paise extra for an additional recovery of ·1%.

B—Cost on the basis of cane cost @ Rs. 1·85 per maund upto 9·4% recovery and 1·5 paise extra for an additional recovery of ·1%.

C—Cost on the basis of cane cost @ Rs. 1·80 per maund upto 9·0 % recovery and 2 paise extra for an additional recovery of ·1%.

### 18. *Schedules for Raw Sugar*

18.1. The Commission was asked to investigate into the cost of production of raw sugar and to indicate the basis on which prices for raw sugar could be determined in future. The Commission has prepared a set of zonal schedules indicating the manufacturing cost, packing charges, selling expenses, etc., which would serve the purpose in view. In order to facilitate future calculations, zonal schedules have been prepared for a uniform recovery of 10 per cent and for durations as for white sugar. The cost schedules for raw sugar are given in Tables X.7A to X.7E. The raw sugar prices should be fixed on the same zonal basis as for white sugar.

18.2. It will be observed that the regional schedules for raw sugar are for a uniform recovery of 10 per cent and make no reference to pol. In actual practice, factories may produce raw sugar of pol ranging from 96.0 to 99.4; when the pol goes down, recovery will increase and *vice versa.* In the schedules for raw sugar either the actual recovery of raw sugar can be applied directly, if available, or the white sugar recovery can be converted into equivalent recovery of raw sugars of different pol values on the basis of the following table:

*Recovery of Raw Sugar with different Pol Values*

(based on 10 per cent white sugar, 35 molasses purity and 0·25 per cent moisture content in raw sugar).

| raw sugar pol | raw sugar recovery |
|---|---|
| 96·0 | 10·56 |
| 96·5 | 10·48 |
| 97·0 | 10·41 |
| 97·5 | 10·33 |
| 98·0 | 10·26 |
| 98·5 | 10·19 |
| 99·0 | 10·11 |
| 99·4 | 10·05 |

Price for raw sugar should be determined by taking into account the appropriate recovery percentage for the particular pol of raw sugar and the manufacturing charges, etc., shown in the tables for 10 per cent recovery should be adjusted on the lines indicated in para 17.1.

### 19. *Rehabilitation*

19.1. The representatives of a section of the industry made a strong plea that most of the existing plants and machinery were installed over three decades back and had undergone heavy wear and tear during World War II and in subsequent years. These needed large scale replacements at an early date. They pleaded that the provision for depreciation on historical values on the diminishing balance method and return at 12 per cent on capital employed had not enabled the industry to provide adequate funds for rehabilitation and modernisation. They stated that the provision for rehabilitation could be made by computing depreciation on the present day cost of new equipment or on the basis of standard block for an economic size unit. They were of the view that the present system of providing depreciation worked as a disincentive to fresh investments. They cited the example of regions like U.P. and Bihar where the average block was very low. Because of the principle of averaging adopted in the cost schedules, heavy investments in block even for rehabilitation and

TABLE X.7A—*Schedule of Cost of Manufacture (excluding cane) for future per Quintal of Raw Sugar for Zone I based on 10 per cent Recovery*

(Rs. per quintal)

| no. of working days on the basis of 22 hours crushing | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
|---|---|---|---|---|---|---|---|---|
| 1. cost excluding basic cost of cane including extra cost on cane . . . . . . . . . . | 30·43 | 28·84 | 27·49 | 26·32 | 25·33 | 24·44 | 23·85 | 23·27 |
| 2. less adjustment* . . . . . . . | (—)0·95 | (—)0·95 | (—)0·95 | (—)0·95 | (—)0·95 | (—)0·95 | (—)0·95 | (—)0·95 |
| 3. packing expenses . . . . . . | 2·03 | 2·03 | 2·03 | 2·03 | 2·03 | 2·03 | 2·03 | 2·03 |
| 4. selling expense . . . . . . . | 0·15 | 0·15 | 0·15 | 0·15 | 0·15 | 0·15 | 0·15 | 0·15 |
| total . . . . | 31·66 | 30·07 | 28·72 | 27·55 | 26·56 | 25·67 | 25·08 | 24·50 |
| dearness allowance escalation for 10 points . . . . | 0·37 | 0·35 | 0·32 | 0·30 | 0·28 | 0·26 | 0·25 | 0·25 |

*This will not vary with the recovery percentage

**Table X. 7B**—*Schedule of Cost of Manufacture (excluding cane) for future per Quintal of Raw Sugar for Zone II based on 10 per cent Recovery*

(Rs. per quintal)

| number of working days on the basis of 22 hours crushing | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 190 | 200 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. cost excluding basic cost of cane but including extra cost on cane . | 29·23 | 27·34 | 25·79 | 24·55 | 23·43 | 22·49 | 21·68 | 20·97 | 20·33 | 19·79 | 19·36 | 19·04 |
| 2. less adjustment* . | (—)0·21 | (—)0·21 | (—)0·21 | (—)0·21 | (—)0·21 | (—)0·21 | (—) 0·21 | (—)0·21 | (—)0·21 | (—)0·21 | (—)0·21 | (—)0·21 |
| 3. packing expenses . | 1·94 | 1·94 | 1·94 | 1·94 | 1·94 | 1·94 | 1·94 | 1·94 | 1·94 | 1·94 | 1·94 | 1·94 |
| 4. selling expenses . | 0·25 | 0·25 | 0·25 | 0·25 | 0·25 | 0·25 | 0·25 | 0·25 | 0·25 | 0·25 | 0·25 | 0·25 |
| total . . | 31·21 | 29·32 | 27·77 | 26·53 | 25·41 | 24·47 | 23·66 | 22·95 | 22·31 | 21·77 | 21·34 | 21·02 |
| dearness allowance escalation for 10 points . . | 0·45 | 0·41 | 0·37 | 0·35 | 0·33 | 0·31 | 0·29 | 0·27 | 0·26 | 0·25 | 0·24 | 0·24 |

*This will not vary with the recovery percentage.

### TABLE X. 7C—*Schedule of Cost of Manufacture (excluding cane) for future per quintal of Raw Sugar for Zone III based on 10 per cent Recovery*

(Rs. per quintal)

| number of working days on the basis of 22 hours crushing | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. cost excluding basic cost of cane but including extra cost on cane . . . . . | 25·80 | 24·49 | 23·43 | 22·52 | 21·76 | 21·11 | 20·57 | 20·07 | 19·72 | . 19·46 |
| 2. less adjustment* . . . . | (—)1·10 | (—)1·10 | (—)1·10 | (—)1·10 | (—)1·10 | (—)1·10 | (—)1·10 | (—)1·10 | (—) 1·10 | (—)1·10 |
| 3. packing expenses . . | 1·97 | 1·97 | 1·97 | 1·97 | 1·97 | 1·97 | 1·97 | 1·97 | 1·97 | 1·97 |
| 4. selling expenses . . . | 0·10 | 0·10 | 0·10 | 0·10 | 0·10 | 0·10 | 0·10 | 0·10 | 0·10 | 0·10 |
| total . . . | 26·77 | 25·46 | 24·40 | 23·49 | 22.73 | 22·08 | 21·54 | 21·04 | 20·69 | 20·43 |
| dearness allowance escalation for 10 points . . . | 0·40 | 0·38 | 0·36 | 0·35 | 0·34 | 0·33 | 0·32 | 0·31 | 0·30 | 0·30 |

*This will not vary with the recovery percentage.

TABLE X. 7D—*Schedule of Cost of Manufacture (excluding cane) for future per Quintal of Raw Sugar for Zone IV based on 10 per cent Recovery*

(Rs. per quintal)

| number of working days on the basis of 22 hours crushing | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. cost excluding basic cost of cane but including extra cost on cane . . . . . . | 27·28 | 25·78 | 24·73 | 23·77 | 22·96 | 22·27 | 21·66 | 21·14 | 20·74 | 20·45 |
| 2. less adjustment* . . . . | (—)1·00 | (—)1·00 | (—)1·00 | (—)1·00 | (—)1·00 | (—)1·00 | (—)1·00 | (—)1·00 | (—)1·00 | (—)1·00 |
| 3. packing expenses . . . | 1·86 | 1·86 | 1·86 | 1·86 | 1·86 | 1·86 | 1·86 | 1·86 | 1·86 | 1·86 |
| 4. selling expenses . . . . | 0·25 | 0·25 | 0·25 | 0·25 | 0·25 | 0·25 | 0·25 | 0·25 | 0·25 | 0·25 |
| total . . . | 28·39 | 26·89 | 25·84 | 24·88 | 24·07 | 23·38 | 22·77 | 22·25 | 21·85 | 21·56 |
| dearness allowance escalation for 10 points . . . . . | 0·33 | 0·30 | 0·28 | 0·26 | 0·25 | 0·24 | 0·23 | 0·22 | 0·21 | 0·21 |

*This will not vary with the recovery percentage.

TABLE X. 7E—*Schedule of Cost of Manufacture (excluding cane) for future per Quintal of Raw Sugar for Zone V based on 10 per cent Recovery*

(Rs. per quintal)

| number of working days on the basis of 22 hours crushing | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. cost excluding basic cost of cane but including extra cost on cane . . . . | 27·37 | 26·00 | 24·89 | 23·96 | 23·18 | 22·50 | 21·92 | 21·41 | 21·03 | 20·78 |
| 2. less adjustment* . . . . | (—)0·88 | (—)0·88 | (—)0·88 | (—)0·88 | (—)0·88 | (—)0·88 | (—)0·88 | (—)0·88 | (—)0·88 | (—)0·88 |
| 3. packing expenses . . | 1·86 | 1·86 | 1·86 | 1·86 | 1·86 | 1·86 | 1·86 | 1·86 | 1·86 | 1·86 |
| 4. selling expenses . . . . | 0·25 | 0·25 | 0·25 | 0·25 | 0·25 | 0·25 | 0·25 | 0·25 | 0·25 | 0·25 |
| total . . | 28·60 | 27·23 | 26·12 | 25·19 | 24·41 | 23·73 | 23·15 | 22·64 | 22·26 | 22·01 |
| dearness allowance escalation for 10 points . . . . . | 0·43 | 0·39 | 0·37 | 0·35 | 0·34 | 0·32 | 0·30 | 0.29 | 0·28 | 0·28 |

*This will not vary with the recovery percentage.

modernisation were not made for fear of not getting adequate return. They urged that in the interest of the consumer the industry should rehabilitate and modernise its plants and machinery so that its productivity and efficiency were increased. For this purpose, a special element in the price should be provided so that the industry would be enabled to earn sufficient resources. However, another section of the industry was of the view that the rehabilitation allowance should not be included in the price but should be treated separately on the merits of each unit.

19.2. If the price level of machinery remains stable throughout the life of the plant, the amount of depreciation recovered through the price would be sufficient for replacing the plant at the end of its normal economic life. But over a period of years in the recent past, commodity prices, including those of capital goods, have been steadily rising. These trends are world-wide. A part of this rise in the case of capital goods is due to improvement in design, capacity, etc. Moreover, in considering the claim for compensation for increased cost of replacement it is necessary to take into account the benefit derived from the use of funds set aside as depreciation from year to year. The Commission considers that there is no justification for providing the full difference between the replacement cost and the historical value of the assets without taking into account the return earned from the use of the depreciation fund, the development rebate earned by the industry and also the improvement in design, etc., resulting from technological development reflected in the assets at the time of replacement.

19.3. Any provision for rehabilitation added to a uniform price applicable to all units in the industry may not give adequate relief to those units which are in need of rehabilitation while those not in need of it would get undue benefit.

19.4. The suggestion of the industry for computing depreciation on the basis of the standard block or the block as it would be after rehabilitation and modernisation, was considered by the Commission. There is bound to be some time-lag in implementing the rehabilitation and modernisation programmes for reasons, such as, arranging for finance, placement of orders for machinery, supply of equipment by the manufacturers, etc. If depreciation on a notional basis were allowed in advance of the completion of the rehabilitation and modernisation programme, it could be criticised as an unjustifiable concession to the industry at the cost of the consumer.

19.5. Investments on rehabilitation and modernisation will vary from factory to factory depending on factors such as the existing equipment (its condition and design), present lay-out, etc., and in some uneconomic factories may well reach the level of capital cost of the standard block. The provision of depreciation on the basis of the standard block or the cost of a new plant would result in unwarranted discrimination and unjustifiable concession, in varying degrees, as between different units in the industry.

19.6. While it is agreed that certain provision for rehabilitation is necessary in the present situation to meet the high replacement cost of the old plants, the various aspects enumerated above have to be considered together with the past profitability in deciding the quantum. If, on examination, it is found that a unit in the industry could have set aside sufficient funds for replacement, had it followed a prudent dividend policy, then in any case, its claim for assistance will not be justified.

19.7. The industry's contention that under the present system of determining prices on the principle of average for a zone, there is no incentive for heavy investments in block, does not seem to be well founded. In recent years of control on sugar, in spite of sugar prices having been fixed on a zonal basis, there has been a substantial addition to capacity even in the sub-tropical belt. Further, a study of the cost structure of old and new factories reveals that in the total cost, there is hardly much difference between the cost of production in the old factories where the element of depreciation is very low and that in the new factories where its incidence is fairly heavy. While in an old unit the capital cost is lower, the recurring cost is often higher, in a new unit of comparable capacity, it tends to be the opposite. What the industry ought to be concerned with is the ultimate ex-factory price. To take out of context one element of cost that goes into the total cost and then to plead that because the incidence in respect of that element of cost is low in the case of old plants some allowance should be given to the industry as a whole, is not justifiable.

19.8. An appropriate way of giving assistance to old units for rehabilitation and modernisation would be to arrange for them loans, where necessary, at market rate of interest and extend to them the development rebate on the investment on the authorised programme for rehabilitation, modernisation and expansion on the same basis as for new units.

19.9. The industry represented that, in view of the tight capital market and the present fiscal policy of the Government, it would not be possible for it to go in for fresh capital or to borrow from banks. As its requirements of funds were large, it would not be possible to obtain them from the financial institutions alone. The Commission feels that there is need for providing financial assistance to sugar factories which have made prudent use of their funds in the past and are still in need of funds for rehabilitation and modernisation.

19.10. Government may consider providing finance for rehabilitation through the existing financial institutions like the Industrial Development Bank and the Industrial Finance Corporation, etc. There is no need for creating a special financial institution for the sugar industry. Additional funds to the extent necessary may be provided through the existing financial institutions. Advances through these institutions to the industry should be given at the normal rates of interest. Financial institutions may also extend concessions like deferred payment of interest and principal.

19.11. Loans should not be given to all the units as a matter of course. The application of each unit should be carefully examined from the technical as well as the economic point of view. Priority should be given to the expansion of such units as are below the economic capacity of 1250 tonnes. Where the cost of rehabilitation and modernisation is very high relative to the cost of a new plant, the desirability of replacing the old plant by a new plant should be examined.

19.12. If for any reason a particular factory which ought to be rehabilitated in order to survive as an economic unit in the industry, fails to take advantage of these facilities, within a reasonable time, Government should consider taking it over or running it as a joint venture in the social interest, especially of the growers, and rehabilitate, modernise and, if necessary, extend it.

## CHAPTER XI

# EXPORT POLICY

From a major importer of sugar, India has now become not only self-sufficient but also an exporter. The export of sugar has gained momentum since 1961 when India, for the first time, was able to export sugar to the U.S.A. and Canada. Following the commencement of raw sugar production in India in 1962, and her entry into another major market, *viz.*, Japan, in 1963, sugar exports increased considerably. India is now an exporter-member of the International Sugar Agreement (ISA). The bulk of the sugar exported is going to the U.S.A., Japan, Canada and the U.K. Exports to the U.S.A. are subject to a statutory quota allotted under the U.S. Sugar Act, while those to the U.K. and Canada are governed by the Commonwealth Sugar Agreement. India has been allotted export quotas under both these agreements.

1.2. Although the statutory quota granted to India under the 1962 amendment of the U.S. Sugar Act, was for 20,000 tonnes only, it has been possible for India to export, on an average, more than a lakh tonnes of sugar per year to the U.S.A. during the last four years because of additional quotas granted by the U.S. Government from time to time. Similarly, though the Commonwealth Sugar Agreement provides for a modest statutory quota of 20,000 tonnes only, it has given India an advantage of securing not only the 'Negotiated Prices' on the statutory quota but also entitled her to a preference of £ 3-15-0 per tonne over the world price on any export in excess of the statutory quota that one may make to the U.K. For instance, during the current year, besides the quota of 20,000 tonnes, India has sold another 50,000 tonnes to the U.K. for which, in addition to the world price, she has got £ 3-15-0 per tonne more as Commonwealth preference only because of the membership of the Commonwealth Sugar Agreement. The table below shows the level of exports of sugar from India since 1957:

TABLE XI.1—*Exports of Sugar from India*

| year | exports<br>quantity (lakh tonnes) | <br>value (Rs. crores) | average value per tonne (Rs.) |
|---|---|---|---|
| (1) | (2) | (3) | (4) |
| 1957 | 1·47 | 11·89 | 809·69 |
| 1958 | 0·49 | 2·47 | 506·59 |
| 1959 | 0·16 | 7·84 | 489·46 |
| 1960 | 0·18 | 8·08 | 464·11 |
| 1961 | 2·68 | 13·32 | 497·22 |
| 1962 | 3·73 | 14·76 | 395·51 |
| 1963 | 4·78* | 32·32 | 675·81 |
| 1964 | 2·34* | 19·08 | 814·19 |
| 1965 (upto 31-8-1965) | 2·52 @ | .. | .. |

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*These include raw sugar also—2·52 lakh tonnes in 1963, and 2.20 lakh tonnes in 1964.

@ Raw Sugar.

1.3. As pointed out earlier, the Indian Sugar Mills Association (ISMA) was appointed by the Government of India as an Export Agency. The work of the Export Agency Division set up by the ISMA for undertaking exports is supervised by a Sub-Committee of the Association. In 1962, the co-operative sugar factories represented to Government that since under the Act each factory was allowed export quota, they should also be given a representation on the Sub-Committee administering and supervising the work of the Export Agency Division. Some representatives of the co-operative factories were subsequently co-opted to the Sub-Committee.

1.4. The Export Agency Division of the ISMA procured sugar on the basis of *pro-rata* apportionment to factories made by Government under the Sugar Export Promotion Act. While the sugar of some of the factories was taken by the Export Agency for actual export, in some cases, as provided under the Act, where the sugar was not of the requisite quality or could not be exported for any other reason, such sugar was diverted to the internal market, and, in its place, additional sugar for export was purchased from other factories. For the export quotas, however, all factories, whether their sugar was exported or not, got the same price. Prior to 1963, additional purchases of sugar for export were made to replace the quantity diverted to internal market. Such additional purchases were made at controlled prices, if control on sugar price existed, or on the basis of tenders invited from factories or by negotiation.

1.5. In 1963, however, Government decided to export raw sugar on a large scale and since raw sugar, unlike white sugar, was not produced by all the sugar factories, it could not be procured against export quotas from each one of these factories. The Export Agency invited tenders from all the factories for supply of raw sugar both against export quota and as additional sale to the Export Agency at a given price. After adjusting the quantity of raw sugar against the export quotas issued or to be issued subsequently by Government, the balance, if any, was treated as additional sale to the Export Agency at a fixed price. The National Federation of Co-operative Sugar Factories (NFCSF) had represented to Government against the system of purchase of raw sugar, its price and administration of the system itself. In 1964, however, exports of sugar were effected outside the provision of the Act and the Government of India itself negotiated purchase of sugar from the factories and appointed the ISMA as handling agents only. The main reason for such a change in the procedure for exports was the fact that the sugar industry did not agree to supply sugar on no-profit no-loss basis.

1.6. From the start of export of sugar in 1958, under the Sugar Export Promotion Act, upto the middle of 1961, Government did not subsidise losses on exports and the sugar factories got *pro-rata* payment on the basis of net sale realisation as provided in the Act. From the second half of 1961, the quantity for export increased substantially and Government devised schemes, from time to time, for subsidising these losses. The subsidy granted by Government on exports upto the end of 1962 was being distributed *pro-rata* along with the net export realisation. Some of the high cost factories objected to distribution of subsidy on *pro-rata* basis. In fact, the Export Agency started distributing the subsidy to the factories on the basis of their cost of production of sugar. The co-operative sugar factories objected to this procedure and the matter was referred to Shri V. Shankar, then Secretary, Department of Food, Ministry of Food and

Agriculture, for arbitration. In 1963, Government decided that each factory should supply sugar for export at no-profit no-loss basis. This, as pointed out above, was not agreed to by the factories mainly in the co-operative sector and producing raw sugar for export. In 1964, these factories did not supply raw sugar for export on no-profit no-loss basis. Government, therefore, had to undertake the export of sugar, bearing the entire loss on export.

2. *Review*

2.1. In recent years, particularly since the enactment of the Sugar Export Promotion Act, 1958, exports of Indian sugar have been continued even though the level of sugar production fluctuated within the country. The export policy has thus been largely influenced by the need for earning foreign exchange rather than the consideration of overcoming the imbalances between the demand for and supply of sugar. In the beginning, the level of international market prices of sugar was higher than that of Indian sugar and this enabled the industry to undertake exports of sugar without incurring losses. In 1958, the international prices of sugar fell and it became difficult to undertake exports of sugar without incurring losses. Upto the middle of 1961, the cushion available in the controlled ex-factory price of sugar, then fixed, enabled the industry to continue the exports without actually having to bear any losses. From the second half of 1961 to the end of 1963, the sugar industry had to bear a small portion of the losses equal to its notional profit in the sugar price, but the actual loss on exports, equal to the difference between the no-profit no-loss price and the net f.o.b. realisation from foreign buyers, was subsidised by Government. Sugar for export was purchased by Government from factories on the basis of tenders and the entire loss was borne by the former. Of late, the foreign demand for Indian raw sugar has been increasing. While, during 1963, about 52 per cent of exports of sugar from India was in the form of raw sugar, during 1964, raw sugar accounted for as much as 94 per cent. During 1965, a quantity of 2·7 lakh tonnes, entirely in the form of raw sugar, against the original target of 2·5 lakh tonnes, will be exported. An attempt is being made to export an additional quantity of 80,000 tonnes of both white and raw sugar.

2.2. As mentioned earlier, the export of sugar is largely governed by the International Sugar Agreement, the United States Sugar Act and the Commonwealth Sugar Agreement. About two-thirds of the global exports of sugar enter what are called the preferential markets where prices are settled by negotiation. The balance one-third gets sold in the free world market at very low prices as may be seen from the following figures:

(1965)

| | price of sugar (Rs. per tonne) | | | |
|---|---|---|---|---|
| | world destination | U.K. (NPQ) | USA | domestic market |
| India . . . . . . . . . | 285 | 615 | 615 | 960* |
| Australia . . . . . . . | 285 | 575 | 615 | 1,064† |

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* f. o. b. cost (including cane cess)

†Based on retail price of 10.2 cents per lb., in the domestic market.

It is expected that as a result of the recent performance of India in regard to sugar exports, India's quota in any future Sugar Agreement would be higher than the quotas allotted to her previously. It may be noted that the quotas allotted by the International Sugar Agreement are in addition to the quotas granted by the U.K. and the U.S.A.

2.3. Apart from the reasons mentioned in paragraph 3.3 of Chapter VIII, an important factor favourable to India's sugar trade is her geographical proximity to certain major sugar importing countries in Asia. Japan, in the East, is one of the largest importers of sugar, importing 1·3 million tonnes per year. Malaysia, another major importer of sugar in East Asia, is also geographically very near to India. Similarly, in the West, Syria, Iraq and Iran are importers of substantial quantities of white as well as raw sugar. Geographical proximity gives a certain advantage in the export market since it enables timely and cheaper shipment of sugar to the importing countries.

2.4. The Commission has recommended in another chapter that, in order to give stability to the sugar industry, Government should have a proper stock policy to help eliminate imbalances between the demand for and supply of sugar which have, in the past, inhibited the growth of the sugar industry. It feels that well-established export markets for sugar, presently developed for earning foreign exchange, will, in the long run, be a useful supplement to the stock policy in dealing with these imbalances.

### 3. *Recommendations*

3.1. As explained earlier, the difference between the domestic price and the export price of the Indian sugar does not compare very unfavourably with that obtaining in some other sugar exporting countries. Further, as estimated by the United States Department of Agriculture, there is a case for stepping up India's export of sugar substantially. The Commission is, therefore, of the view that exports of sugar should not only be continued but also augmented and efforts should be made to obtain as large a quota as possible under all the three agreements, and, especially, larger quotas for the preferential markets.

3.2. The main impediment in the way of increasing the export of sugar is the high cost of production of sugar within the country. The need for reducing the cost of production of sugar in India, in order to improve her competitive position in the world market, is urgent. In the first place, cane price being the largest constituent of the cost of manufacture of sugar, it will be necessary to reduce gradually the current minimum price of sugarcane. This will be possible if adequate steps are taken to increase appreciably the per acre yield of sugarcane so that the grower does not suffer any reduction in the total returns from sugarcane cultivation. The Commission has discussed elsewhere the steps to be taken in this regard. Second, any reduction in the cost of manufacture of sugar would necessitate an all-round improvement in the efficiency of the sugar factories. In this context, it has been suggested that big factories should be set up in order to reduce the cost of manufacture. The Commission understands that an increase in the size of a factory brings about only a small reduction in the cost of manufacture. Further, this reduction in the manufacturing cost is offset to a large extent under existing conditions in India by various disadvantages, such as higher transport cost and greater driage of cane. The Commission has discussed this issue in Chapter XII and concluded that, since it involves a number of considerations including the question of proper utilisation of by-products such as bagasse and molasses, this matter should be examined carefully before Government takes any decision to set up large-size factories.

3.3. The Commission has been asked to express its view on the sharing of export losses by Government, the industry and the consumer. Currently, the entire loss is being met by the Government of India out of the proceeds of the excise duty on sugar. While during the period of control, the incidence of this burden is passed on to the consumer in the form of higher domestic price, during decontrol, the incidence will be shared by the producer and the consumer in a proportion depending upon the relative elasticities of supply of and demand for sugar. The Commission does not see a justification for a special levy on the sugar manufacturer so long as this levy can be passed on to the consumer. In a period of control, again, since the rate of return, which is considered fair, is allowed by Government for the purpose of price fixation, it will not be appropriate to make the industry pay for the export losses out of this return. The Commission, therefore, is of the view that the Government of India and the State Governments should bear the entire loss on export of sugar. The current rate of excise duty may be raised for the purpose if it is considered necessary. If, however, it is felt that on account of social or international considerations, the manufacturers should be made to share a part of the export loss, an appropriate way of distributing it among the sugar factories would be on a basis *pro-rata* to the 'effective production capacity' as defined elsewhere in the report. There will be relatively less scope for the manufacturers to shift the burden on to the consumers if the levy is based on capacity rather than actual output.

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3.4. The State Governments levy cane cess/purchase tax on sugarcane crushed by sugar factories. The total amount of revenue earned from it during 1962-63 was of the order of Rs. 11·5 crores. The State Governments can share the burden of export loss by forgoing a certain proportion of this revenue. The Commission is of the view that a workable formula may be devised in order to have an equitable sharing of export loss by the sugar producing states. Putting total exports as X, total production of sugar as Y, production of sugar in a particular state as S and the proceeds from cess/purchase tax on sugarcane per tonne of sugar produced by sugar factories in that particular state as R, the total share of that state in the export loss could be determined on the basis of the following formula:

$$X \times \frac{S}{Y} \times R$$

3.5. Of an estimated loss of Rs. 31—45 crores on export of 5—7·5 lakh tonnes of sugar, it should be possible to recover Rs. 2·50—3·75 crores from the State Governments on the basis of the formula mentioned in the preceding para. The balance may be borne by the Government of India.

The revenue accruing to the Government of India on account of excise duty would be about Rs. 128 crores on the basis of a production of 45 lakh tonnes in 1970-71, and an excise duty of Rs. 286·5 per tonne.

3.6. The Commission has noted that there has been a change in the procedure for the export of sugar since 1964. Government has itself undertaken the export of sugar but the actual handling of exports is still being done by the Export Agency of the ISMA. The Commission has also noted that there is a difference of opinion between the joint-stock and the co-operative sectors of the sugar industry in regard to the agency for exports. The Commission is of the view that it would be desirable to assign the task of handling exports to an independent agency. It is, however, not necessary to set up a new sugar marketing organisation for this purpose alone. The State Trading Corporation (STC), which is already acting as an export agency of Government for various other commodities, should be considered an appropriate agency for the export of sugar also. The Commission feels that any expenses, which the STC may have to bear in this connection would, by virtue of an economy in overheads, be, if any thing, somewhat lower than they would be if a new sugar marketing organisation were set up for the purpose.

3.7. While during 1962-63 and 1963-64 seasons the raw sugar manufactured in the country had an average polarisation of about 97, having regard to the quality specification of the various markets, Government has made arrangements for production of raw sugar of two qualities during 1964-65: (i) high polarisation raws with a basic polarisation of 98.5 in Maharashtra and (ii) low polarisation raws with a basic polarisation of 97·5 in Uttar Pradesh, Bihar and Andhra Pradesh. While the factories in Uttar Pradesh, Bihar and Andhra Pradesh have agreed to an economy of Rs. 2·50 to Rs. 3·25 per quintal in the manufacture of raw sugar, as compared to the control price of D-29 grade, the factories in Maharashtra have agreed to effect an economy of only 20 paise per quintal in the manufacture of raw sugar with higher polarisation of 98·5. The question of economy in the cost of manufacture of raw sugar has been examined by the Commission and it appears that the cost of manufacture of raw sugar is significantly lower than that of white sugar. Separate cost schedules for raw sugar, constructed by the Commission and given in Chapter IX may be followed for the determination of ex-factory prices for raw sugar for different zones and different pols.

3.8. As mentioned in Chapter VI, while currently the total production of molasses in the country is about 11 lakh tonnes, only 3 to 4 lakh tonnes are utilised for the manufacture of alcohol. It has also been observed that the factories do not have appropriate storage facilities for molasses. One of the reasons for this, which have been mentioned to the Commission, is low molasses price fixed by Government for delivery to the distilleries. The Commission has already suggested that the control price for molasses should be suitably increased. If, in addition, some incentive in the form of export permits for molasses is provided to the factories, this would fetch them higher returns and thereby enable them to take to measures for proper storage and utilisation of this important by-product. Currently, the export of molasses is allowed on a restricted basis. Only a part of the surplus molasses from the factories located in the tropical belt, where sufficient distillery capacity has not yet come up, is exported. The export of molasses (inedible, edible and syrups) during the last few years has been as follows:

TABLE XI. 2—*Exports of Molasses (Inedible, Edible and Syrups).*

| year | exports | | value per tonne (Rs.) |
|---|---|---|---|
| | quantity ('000 tonnes) | value (Rs. lakhs) | |
| (1) | (2) | (3) | (4) |
| 1957 | 26·5 | 23·6 | 89·05 |
| 1958 | 43·2 | 36·3 | 84·02 |
| 1959 | 34·7 | 29·1 | 83·86 |
| 1960 | 13·9 | 9·6 | 69·10 |
| 1961 | 85·0 | 63·6 | 74·82 |
| 1962 | 109·4 | 76·5 | 69·93 |
| 1963 | 98·5 | 97·9 | 99·39 |
| 1964 | 14·4 | 18·7 | 129·86 |

The export of molasses is allowed by Government only if the price realised therefrom is not less than Rs. 75 per tonne. The Commission has suggested elsewhere that the khandsari units working in the country should avoid using sulphur and the vacuum pan factories should produce a larger proportion of raw (off-colour) sugar, so that a larger supply of edible molasses becomes available. This is also necessary in view of the fact that there is a large demand for edible molasses from foreign countries where it is used as cattle feed. Till such time as sufficient distillery capacity is created in order to utilise the entire production of non-edible molasses, Government should liberalise the export policy for molasses. Unless a sustained and regular market is created for Indian molasses, it may be difficult to increase the export of this commodity in future when the production of molasses would be more than what could be utilised by the indigenous distilleries. The Commission is of the view that some procedure could be devised whereby each sugar factory delivering one tonne of molasses to a distillery may be given an export permit of, say, half a tonne without delay. Further, the Commission has been informed that some of the alcohol-based industries, such as, polythene, synthetics, etc., may use in future alcohol made from naptha instead of molasses as their basic raw material. It would, therefore, be necessary to plan ahead for a proper utilisation of alcohol manufactured from molasses. It appears that there is a good demand for potable alcohol in the foreign markets. It should not be difficult for the distilleries to change over from the production of industrial alcohol to potable alcohol. In order that an export market for potable alcohol is properly developed, Government should liberalise the export policy for alcohol. It should also fix a minimum quota for exports, so that the foreign buyer can plan ahead on the basis of an assured supply from India. The liberalisation of export policy for both molasses and alcohol would earn for the country a substantial amount of foreign exchange without calling for subsidisation of the export of these commodities on any significant scale.

# PART IV

# LICENSING POLICY

# CHAPTER XII

# LICENSING POLICY

A brief historical review of the licensing policy followed by the Government of India has been given in paragraphs 4·1 to 4·9 of Chapter III. Table XII.1 gives the progress of sugar industry in terms of the additional capacity during the period 1950—1964.

During the past decade and half, the total additional working capacity (installed capacity in operation) in terms of cane crushed per day in the sub-tropical and tropical belts increased to 1,39,348 tonnes and 77,840 tonnes from 1,02,185 tonnes and 19,095 tonnes respectively. During the first period, *i.e.* 1950—57, two-thirds of the total additional working capacity was in the form of new units and one-third in the form of expansion of the existing units. The share of the tropical and sub-tropical belts both in the total additional capacity as well as in the expansion of old units and creation of new units was almost equal. The share of the joint-stock sector was as much as 85 per cent in the case of expanded units and 57 per cent in the case of new units. This picture changed, to a significant extent, during the subsequent period *i.e.*, 1958—64, in favour of the tropical belt and the co-operative sector. The share of the tropical belt in the total additional working capacity (achieved both through expansion of existing units and setting up of new units) was as much as 66 per cent (as against 47 per cent during the previous decade) of which 58 per cent was due to creation of new units. The share of the co-operative sector in the belts taken together increased to 55 per cent during the period as compared to 33 per cent during the previous period. In all, 46 new co-operative sugar factories were set up during the period 1950 to 1954, of which 39 were set up during the second period, *i.e.*, 1958—64.

## 2. *Current Licensing Policy*

2.1. As mentioned in paragraph 4.2 of Chapter III, the practice of licensing began in the year 1952 after the enactment of the Industries (Development and Regulation) Act, 1951. Since then, Government has set up, from time to time, *ad hoc* committees to consider applications for grant of licences for additional capacity in the sugar industry. These Committees examined the applications on the basis of certain considerations, *e.g.*, availability of sugarcane, potentiality of sugarcane cultivation, availability of irrigation facilities, technical and economic feasibility of the scheme, and financial capacity of the entrepreneur. The Licensing Committee, which was set up in 1964, was required to examine applications on the basis of the following considerations, apart from those mentioned above: (i) first preference to expansion of existing units including uneconomic units; (ii) second priority to licensing of new units in the co-operative sector, the capacity of the new units ranging from 1200—2000 tonnes; and (iii) preference to those units which, through expansion, could develop the by-product industries. It had, however, been emphasised by Government that the guiding criterion should not be proportional allocation to different states.

## TABLE XII.1—*Additional Capacity of Sugar Industry during* 1950—1964

(capacity=tonnes cane per day)

| | 1950—57 | | | | | | 1958—64 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | tropical | | sub-tropical | | total | | tropical | | sub-tropical | | total | |
| | no. of producing units | capacity | no. of producing units | capacity | no. of producing units | capacity | no. of producing units | capacity | no. of producing units | capacity | no. of producing units | capacity |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) |
| I. *expansion* | | | | | | | | | | | | |
| (*a*) co-operatives . . . | 1 | 1,000 | .. | .. | 1 | 1,000 | 2 | 650 | .. | .. | 2 | 650 |
| (*b*) joint-stock . . . | 8 | 2,905 | 8 | 3,721 | 16 | 6,626 | 9 | 4,650 | 31 | 16,770 | 40 | 21,420 |
| total . . | 9 | 3,905 | 8 | 3,721 | 17 | 7,626 | 11 | 5,300 | 31 | 16,770 | 42 | 22,070 |
| II. *new units* | | | | | | | | | | | | |
| (*a*) co-operatives . . . | 4 | 3,400 | 3 | 3,250 | 7 | 6,650 | 32 | 31,450 | 7 | 7,650 | 39 | 39,100 |
| (*b*) joint-stock . . . | 5 | 3,640 | 5 | 5,172 | 10 | 8,812 | 9 | 11,050 | 1 | 600 | 10 | 11,650 |
| total | 9 | 7,040 | 8 | 8,422 | 17 | 15,462 | 41 | 42,500 | 8 | 8,250 | 49 | 50,750 |
| grand total | 18 | 10,945 | 16 | 12,143 | 34 | 23,088 | 52 | 47,800 | 39 | 25,020 | 91 | 72,820 |

REMARKS : Capacity given under *expansion* means net addition to the initial capacity of the factory.
Capacity shown under *new units* is the initial capacity of the new factories.

2.2. A perusal of the licensing policy followed in the past shows that the considerations that were placed before the different committees were, by and large, short-term or *ad hoc* ones. Factors such as agro-climatic conditions, comparative returns from cultivation of sugarcane and its competing crops, economic and social backwardness of certain regions in the country, etc., were not always kept in view. In actual practice, even the short-term or *ad hoc* criteria were not strictly adhered to and the sanction of additional capacity was influenced by: (a) grant of licences to almost all the states from which applications had been received; (b) support of the State Governments for such applications; and (c) financial standing of the entrepreneur. It also appears that an overall view of the comparative advantages of alternative locations was not always taken by the authorities concerned in examining the applications for licences.

### 3. *Problems*

3.1. The main problems to be considered, in the context of evolving a long-term licensing policy, say, for the next ten years, relate to (i) assessment of additional capacity to be licensed; (ii) determination of economic size of a sugar factory; (iii) whether the additional capacity to be licensed should be achieved by expanding the capacity of the existing factories and/or by setting up new factories; (iv) what the best location for installing new factories would be; and (v) whether the new factories should be in the co-operative sector, public sector, or private sector or in all the three sectors. The Commission elicited the views of the State Governments, the sugar industry and other interests on most of the issues mentioned above.

3.2. Although the sugar industry was brought within the purview of the Industries (Development and Regulation) Act, 1951, with a view to bringing about its planned development, in actual practice, there has been no comprehensive planning yet of the licensing of additional capacity in the industry in regard to location and size of individual units. The decision regarding creation of additional capacity has been influenced more by *ad hoc* considerations, such as, year-to-year availability of sugar, rather than by any long-term assessment of total requirements of sugar for internal consumption and exports.

3.3. Divergent views have been expressed by different State Governments and representatives of the sugar industry on future licensing policy A view has been expressed by some State Governments that the expansion of existing units should be given priority over the creation of new units: in respect of the expansion of existing units, priority should be given to uneconomic units whose present capacity is below 2000 tonnes. Further, these factories whose capacity may be 2000 tonnes or more—but which have a scope for future expansion having regard to the availability of sugarcane in their areas—may be allowed suitable expansion. These State Governments have also stated that additional capacity should be equitably distributed amongst the sugarcane producing states, as far as possible, and statewise quota should be determined from the beginning and capacities licensed accordingly. A variant of this suggestion has been made by Governments of some sugar-deficit states that the expansion of existing factories or the setting up of new units should be allowed in their states as this will relieve pressure on transport, distribution machinery, etc. On the other hand, a number of State Governments have expressed the view that the expansion of existing inefficient and uneconomic units should not be allowed. They prefer licensing of new units to the expansion of existing ones as this would help in a dispersal of the sugar industry and balanced regional development.

3.4. Similar divergent views have been expressed by representatives of the sugar industry also. Representatives of the joint-stock sugar factories have stated that, first of all, uneconomic units should be made economic. Such of the uneconomic units as cannot expand should be allowed to shift and, in allocation of new sites, they should be given preference. According to this view, the expansion of existing units would result in saving in time, rupee finance and foreign exchange. Further, while sanctioning additional capacity, it should be ensured that it does not adversely affect the working of the factories in the neighbourhood and that both the existing and the new capacities are put to optimum use. These representatives have further stated that, in case new factories are established, they should be located at reasonable distances away from the existing units and charged with the responsibility of developing their own cane areas. Representatives of the co-operative sugar factories are of the view that the expansion of existing units is not a proper remedy in the case of factories which are inefficient or uneconomic on account of insufficient or fluctuating cane supply, low quality of cane available, obsolete machinery or ill-balanced plant. In such cases, the remedy suggested is a programme of rehabilitation for existing plants and equipment and/or a programme of development of cane supply. They maintain that the expansion of existing units on the ground that it would entail lower capital cost is not justified because, in the sugar industry, the share of the cost of manufacture in the price of the final product is relatively low, while the share of other costs, *e.g.*, costs of transportation and raw materials, is high. They also disfavour the expansion of existing units on the ground that it will lead to a larger concentration in the sugar industry.

3.5. Regarding the issue whether the additional capacity for new units should be given to the private sector or the co-operative sector, almost all the State Governments have expressed themselves in favour of confining the licensing of new units to the co-operative sector. Some of the State Governments, however, are of the view that if in an area, otherwise suitable for a sugar factory, a co-operative unit is not likely to come up, licence may be given to a joint-stock factory. Representatives of co-operative sugar factories have stated that, even in the case of expansion of existing units, preference should be given to the co-operative sector. One State Government has even suggested that the expansion of existing private units should be strictly on the understanding that they will eventually be organised along co-operative lines. Representatives of the co-operative factories maintain that the co-operativisation of sugar production should be the guiding principle even in the matter of rehabilitation of uneconomic units.

3.6. Some State Governments have favoured the setting up of big units or expanding the size of the existing units to a substantially larger size. Some other State Governments, however, feel that, in the interest of economic development of a large number of areas, the sugar industry needs to be widely dispersed and decentralised. The size that is suggested by the former is of the order of 3000—4000 tonnes while the latter favour the setting up of a factory with a minimum economic size of 1250 tonnes. Till such time as the scope for setting up of such minimum economic size units exists, the size of the existing units should not be increased. In this connection, the question of determining a minimum economic size of a sugar factory has been raised. A Technical Committee, set up by the Government of India, has given in December, 1964, standard specifications for sugar factories of two sizes; one of 1250 tonnes with provision of expansion upto 2000 tonnes; the other of 2500 tonnes with provision of expansion upto 3500 tonnes.

3.7. Some State Governments have also made a plea for setting up large-size units in their states located near the ports for manufacturing either refined sugar or raw sugar for export. The size suggested is of the order of 4000—5000 tonnes. It has been represented that a large unit would enable economic combination within the same unit of the production of sugar, paper pulp from bagasse and power alcohol from molasses. It has been indicated that two units of 2000 tonnes capacity in nearby locations or one unit of 4000 tonnes at one site would be necessary to produce 100 tonnes of bagasse pulp per day. To do this, it would be necessary to have a compact area of 40,000 acres for producing the required quantity of sugarcane.

3.8. Regarding location of new factories, the states in the tropical belt are of the view that, on account of favourable agro-climatic conditions, a sizeable proportion of the capacity to be licensed should be set apart for these states. Some other State Governments have suggested that new sugar factories may be installed in sugar-deficit states which have potentiality for sugarcane production.

3.9. On the basis of agro-climatic and other considerations, the Sugarcane Breeding Institute, Coimbatore, has divided the whole country into five regions as follows :

*Region A.*—The region lies within the latitudinal belt of 15° to 22½°N and covers Gujarat, Maharashtra, North Mysore, North Andhra Pradesh (except the coastal strip extending about 50 miles interior) and South Madhya Pradesh, wherein high yields of cane and recovery are possible due to climatic advantages and irrigation facilities. This region is the most productive area in the country from the point of maximisation of sugar per acre. The system of Adsali (18 months) planting is in vogue in parts of this region.

*Region B.*—This region lies below 15°N covering Kerala, South Mysore, Madras, Pondicherry, the rest of Andhra Pradesh (including the coastal strip extending about 50 miles interior) and Orissa. This region, while very well suited for high yields (as good as the Region A), cannot attain very high recovery in view of (i) the absence of enough low temperature in the interior of Madras and Kerala to stop vegetative growth and help in higher accumulation of sugar, and (ii) the adverse effect of north-east monsoon in the coastal region, right from Orissa to Madras, during the ripening period. This region should aim at high yields of cane per acre subject to a minimum sucrose content.

*Region C.*—The region covers the main north Indian belt along the Indo-Gangetic Plain and includes Bihar, Uttar Pradesh (barring the terai area in Bihar and Uttar Pradesh), South Punjab, Rajasthan and North Madhya Pradesh. This region suffers from the handicap of drought and severe summer temperature practically stopping the growth of cane for 2—3 months and hence the yield per acre is of a low order as compared to that in Regions A and B above. The need for irrigation facilities to step up yields in this region has to be stressed. In addition, since this area is subject to periodical epiphytotics of red-rot disease, the need for clean cultivation in addition to growing resistant varieties can hardly be over-emphasised. The effective low temperature alongwith the absence of frost is conducive to higher recovery than now. But that would be possible, if red-rot disease is eradicated from most of the areas by good cultivation practices and growing resistant varieties.

*Region D.*—This region covers North Punjab and the *terai* area of Uttar Pradesh and Bihar. It suffers from two serious defects, *e.g.*, water-logging and frost and hence both the yield of cane per acre and recovery of sugar are low. The separation of the *terai* area into a distinct region has been necessitated by the peculiar agro-climatic conditions and is not based entirely on duration of crushing and recovery. The soil is alluvial, rich in organic matter and suitable for growing medium-thick cane varieties as contrasted with Region C where medium or medium-thin cane alone can flourish. Consequent on waterlogging, red-rot disease thrives in the area. The provision of drainage to offset waterlogged conditions is a long range programme involving the agriculture and irrigation departments and has to be undertaken on a community level. The problem of frost can, to some extent, be solved through resistant varieties and irrigation. The position would, however, be not very satisfactory unless efforts are made for an efficient drainage system.

*Region E.*—This region covers West Bengal and Assam and is a high rainfall area, especially the latter. Waterlogging is fairly common. Yields can be very satisfactory because of adequate rainfall but the recovery, especially in Assam, is likely to be low in view of the short sunshine hours. This region may receive a higher priority to Region D in the matter of development.

3.10. An analysis of comparative economic advantage of growing sugarcane and its competing crops in different parts of the country has been attempted in Chapter IV. The broad conclusions that emerge, after taking into consideration both the agro-climatic factors and comparative economic advantage criteria, are as follows. Region A seems to be better placed than other Regions on the basis of both high yield and high recovery and higher comparative returns from growing sugarcane. Region B seems to be favourably placed in the matter of high yield per acre (perhaps the highest in the country) and moderate recovery (lower than that in Region A) but not in terms of comparative returns from alternative crops. The yields per acre of competing crops, such as rice, in this region, are also very high. Although the yield per acre of sugarcane and sugar recovery in Region C are somewhat lower than those in Region B, this Region has greater comparative advantage over the latter in growing sugarcane as the gross and net returns per acre from sugarcane compared to those from competing crops are higher. Within this Region, however, Rajasthan and Madhya Pradesh do not appear to be well-placed, at present, for an increase in sugarcane production. Region D seems to possess the lowest physical as well as economic advantage, on the one hand, the yield per acre of sugarcane and sugar recovery are both low; on the other hand, this Region seems to have lower comparative advantage in growing sugarcane relating to important competing crops, such as wheat and cotton. Region E is somewhat better placed agro-climatically than Region D, but the comparative advantage of growing sugarcane as against competing crops, such as jute and rice, is rather low in this Region.

3.11. The above analysis is based on the situation prevailing at present in the sugar producing states. If proper measures are taken to remove the disadvantages from which some of the regions suffer at present, it may be possible for certain areas within the regions to qualify for further expansion of the sugar industry in future. The Commission is of the view that the position regarding relative agricultural and economic advantages may be reviewed, say, every five years, in order to make a proper appraisal of the potentiality of different parts of the country for the development of the sugar industry.

## 4. *Recommendations*

4.1. In Chapter VIII, an estimate of requirements has been made for the three sweetening agents, *e.g.*, gur, khandsari and sugar, at the end of the Fourth and Fifth Plans, *i.e.*, at the end of 1970-71 and 1975-76. The requirements of sugar for internal consumption work out to 37·6 and 53·4 lakh tonnes respectively. If the export demands of 7·5 lakh tonnes and 10 lakh tonnes during the Fourth and the Fifth Plan periods are added to the above estimates, the total demand for sugar works out to 45·1 and 63·4 lakh tonnes, *i.e.*, roughly 45 and 63 lakh tonnes at the end of 1970-71 and 1975-76 respectively. According to the latest information available to the Commission, while the total sugar production capacity so far licensed is about 41·5 lakh tonnes, the installed capacity during 1965-66 season is expected to be only 32·5 lakh tonnes. There is thus, a gap of 9 lakh tonnes between the licensed capacity and the installed capacity. The Commission has taken into consideration the presently installed capacity for the purpose of evolving the future licensing policy. On this basis, the additional capacities that may have to be installed during the Fourth and Fifth Plan periods work to about 12·5 lakh tonnes (1,04,000 tonnes of cane crushing capacity per day) and 18 lakh tonnes (1,50,000 tonnes of cane crushing capacity per day) respectively. In view of the usual lag between licensing and establishment of capacity, licensing may have to be suitably higher than this figure.

4.2. The determination of economic size of a sugar factory is pertinent in the case of both the expansion of existing capacity of small-size factories and the setting up of new units. The additional cost of manufacture of sugar, on account of transport and driage of sugarcane due to hauling of sugarcane over a long distance, often increases substantially with the increase in the size of a factory under conditions now obtaining in certain parts of the country. Where a very large number of small sugarcane growers supply cane to a factory, efficiency suffers on account of the difficulty of establishing close contact between the factory management and the farmers. The distribution of the total number of factories working at present by size-groups indicate that 116 factories are below the capacity of 1000 tonnes and 60 factories are within the size-group of 1000—1500 tonnes. The expansion of the capacity of existing factories and creation of new units are limited by two considerations: (a) the additional capacity that needs to be created during the next ten-year period, and (b) the total resources for the development of sugar industry available under the Five Year Plans. It will, therefore, be necessary to give priority, in the first instance, to the expansion of smaller units which are below the minimum economic size, in order to enable them to expand to a capacity that may be justified by techno-economic considerations. This consideration is further strengthened by the fact that the distribution of the limited additional capacity to be created should be dispersed over as wide an area as possible. It has been mentioned earlier in paragraph 3.6 that a Technical Committee has recently worked out specifications for two standard sizes; one of 1250 tonnes with provision for expansion upto 2000 tonnes; the other of 2500 tonnes with provision for expansion upto 3500 tonnes. As a result, the sugar machinery manufacturers would be producing machinery according to these standard specifications and this is likely to ensure considerable economy. It is understood that a factory of the size of 1250 tonnes, set up according to the specifications prescribed by the Technical Committee, will be able to crush significantly more than this quantity if adequate supply of cane is available to it and some addition is made to the 'Boiling House' capacity. On the basis of these considerations, the Commission recommends that, for the present, the minimum economic size of a factory should be fixed at 1250 tonnes per day, with provision for expansion upto 2000 tonnes. It would, however, suggest that the question of determination of economic size of a sugar factory may be reviewed at intervals of, say, 5 years in the light of further developments in sugar technology.

4.3. The Commission has considered the various merits and disadvantages of having a large-size factory. The economies of scale, which result from having larger units and captive by-product plants, are well-known. These will, however, have to be weighed against certain disadvantages peculiar to an industry which depends on a raw material that is perishable and is produced by a large number of small farmers. A large-size factory of 2000 tonnes or more would require an area of nearly 20 thousand acres to feed it in the sub-tropical belt. Unless such an area consists of big plantations or is distributed over a small number of large-size farms, the above economies may be offset to some extent by increase in cost of transport of cane from long distances and greater driage of cane leading to loss in recovery. In addition, sugarcane cultivation in small holdings scattered widely would render intensive development work by the factories difficult. Further, in such a situation, the direct contact between the farmer and the factory would greatly suffer.

4.4. As regards big factories of 4000—5000 tonnes capacity for purposes of export, these will prove economic only if they are based on large plantations. Availiable information shows that it may not be possible to get large compact areas for such plantations except, probably, in Rajasthan. But in Rajasthan, conditions are more favourable for the cultivation of long staple cotton, the production of which deserves high priority for saving foreign exchange. Moreover, as explained earlier, agro-climatically Rajasthan is not so suitable for sugarcane cultivation as some other areas in the country. The Commission understands that the Government of India has appointed a Committee to examine the possibility of setting up large-size factories primarily for export. That Committee will, no doubt, consider the relevant issues in greater detail.

4.5. The Commission feels that there is a strong case for allocating a substantial proportion of the additional capacity for the establishment of new units. The modernisation of agriculture and development of rural areas call for the promotion of agro-industries of which sugar is one of the most important. If a large number of factories of the minimum economic size is set up, it should help the dispersal of the industry and provide a larger number of "growth points" over a wider area. This would also help promote a more rational locational pattern for the sugar industry reducing, in particular, the cost of transport of sugar. However, the need for the expansion of some of the existing units also cannot be overlooked. Some of these require rehabilitation. Certain others will be more balanced and viable if a small expansion is permitted. A few will be able to set up by-product industries like alcohol or pulp with small addition to their existing capacity.

4.6. Government has already issued licences for additional capacity which, on being installed, will increase the total capacity of the industry to 41·5 lakh tonnes against the targeted capacity of about 45 lakh tonnes at the end of the Fourth Plan. The installed working capacity in 1965-66 is, however, estimated to be 32·5 lakh tonnes. Of the extra licensed capacity of 9 lakh tonnes, which is yet to be installed, the Commission understands that, about 3 lakh tonnes would be in the form of new units. Further, the targeted capacity as proposed by the Commission for the end of the Fifth Plan, *i.e.*, 1975-76, is 63 lakh tonnes. The extra capacity, that has to be installed between 1965-66 and 1975-76, works out to about 30·5 lakh tonnes. The expansion needs, during the next ten-year period of the existing factories including those for which licences for expansion have already been issued to the extent of 6 lakh tonnes and of the new factories which would be set up during the Fourth Plan, would amount to about 12·8 lakh tonnes. The Commission recommends that an equivalent capacity should also be reserved for the creation of new units during the next ten-year period. Thus, against the target of additional capacity of 30·5 lakh tonnes (or 254 thousand tonnes of cane crushing capacity per day) to be installed during the next ten-year period (1965-66—1975-76), about 25·6 lakh tonnes (or 214 thousand tonnes of cane crushing capacity per day) would be required, half for the creation of new units and half for the expansion of existing units. The decision about the balance of 4·9 lakh tonnes (or 40 thousand tonnes of cane crushing capacity per day) may be taken only towards the end of the Fourth Plan period in the light of export prospects and the recommendations of the Committee which has been appointed by Government to look into the question of establishment of large-size factories for export.

4.7. Out of the capacity to be set aside for the expansion of existing units, the Commission recommends that first priority should be given to the expansion of uneconomic units having installed capacity of less than 1250 tonnes per day. On the basis of the minimum economic size of a factory, *e.g.*, 1250 tonnes, roughly a maximum of 55,000 tonnes additional capacity will be required for 132 units. If, however, the 'unfavourable areas'* are excluded, it would reduce the additional capacity required for expansion of uneconomic units by about 5000 tonnes. The uneconomic units, located in unfavourable areas, may be asked either to merge so as to operate more efficiently or to shift to areas better suited to sugarcane cultivation, preferably within the same state. In case neither of the above is feasible, the State Governments should take up urgently special measures for the improvement of cane cultivation in the reserved areas of these factories. In the light of improvements made, suitable expansion in the capacity of these units may be considered some time later.

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*'Unfavourable' on the basis of agro-climatic and economic considerations.

4.8. Regarding the need for expansion of those units whose capacity is above 1250 tonnes each, the Commission recommends that: (a) factories, which can establish that, with small expansion, not exceeding 300/400 tonnes, they would become significantly more balanced and economic than now, should be allowed such expansion; (b) factories asking for further substantial expansion upto 2000 tonnes should be permitted such expansion if it is established that they have taken requisite steps to improve the yield per acre of sugarcane from their existing reserved area; (c) factories above 2000 tonnes should not normally be permitted to expand unless these units fulfil the condition mentioned in (b) above and also satisfy the authority concerned that (i) they would set up by-product industries like alcohol and pulp, and (ii) a substantial part of their sugar production would be supplied for export.

4.9. The Commission recommends that the additional capacity of 3·5 lakh tonnes to be created during the Fourth Plan period should be distributed over (i) new units and (ii) the expansion of existing uneconomic units to enable them to expand to a capacity up to 1250 tonnes and expects that this would absorb practically the whole of it. However, if any balance is left, it may be issued against the genuine demands for small expansion, of say, 300/400 tonnes for those factories which, with such an expansion, would become more balanced and viable. The question of issue of licences for substantial expansion of factories above 1250 tonnes may be considered against the additional capacity to be created during the Fifth Plan period.

4.10. The Commission would emphasise that proper technical examination of each application for expansion of existing capacity should be undertaken before expansion is granted by Government. For this purpose, the feasibility of setting up a well-equipped cell for consultancy service in the National Sugar Institute should be explored.

4.11. In view of the fact that there is a large scope for increasing the yield per acre of sugarcane from its present level by suitable provision of irrigation, drainage and fertilizer and also the fact that the current minimum price fixed for sugarcane is highly attractive to the cultivator and gives him higher returns than those from cultivation of foodgrains, it would be necessary to restrict, as far as feasible, any expansion of area under sugarcane cultivation. This has become particularly important in view of the present emergency which requires that there should be no net diversion of area from foodgrains. The Commission, therefore, recommends that Government should fix a compact area for each factory based on the present licensed capacity and should not allow an expansion of this area in future especially in regions where there is a substantial scope for improvement in yield per acre. If measures are taken to improve the yield per acre of sugarcane from this fixed area, and thereby a larger supply of sugarcane is assured, the factory may in due course, be allowed suitable expansion in its capacity.

4.12. The policy regarding location of new sugar factories followed by Government in the past had been based mostly on *ad hoc* considerations. Instances have been brought to the notice of the Commission of undesirable extra-economic considerations having influenced the location of some factories either in unfavourable areas or near an existing factory. Further, it has been noticed that some new factories did not get adequate cane supply during their initial period of working and the position improved only when large additional area had been diverted to the cultivation of sugarcane. The Commission would, therefore, emphasise that well-defined criteria should be laid down and adhered to rigidly by Government when deciding upon the location of new sugar factories. These criteria should be: (a) agro-climatic considerations, (b) comparative economic advantage of growing sugarcane *vis-a-vis* competing crops, and (c) consideration of freight advantage from a surplus sugar producing area to the area in which it is proposed to set up a new factory. The criteria mentioned at (a) and (b) above have been discussed earlier in paragraphs 3.9 and 3.10. It has been represented to the Commission that new sugar factories may be located in those states which are deficit in their requirements of sugar. On the basis of the criteria (a) and (b), the States of Punjab, Jammu and Kashmir, Rajasthan, North Madhya Pradesh, coastal Orissa, West Bengal and Assam do not appear to be favourably placed, under present conditions, for the expansion of the sugar industry. Location of a new factory in these areas may, however, be considered if the higher cost of manufacture of sugar in these areas is counter-balanced by the cost of transporting sugar from a neighbouring surplus sugar producing area. (The Commission understands that the average cost of transport of sugar over a distance of about 400 kilometres would not be more than Rs. 5 per quintal). Apart from cost, the difficulty of transport will also have to be taken into account in the case of Assam, Nagaland, Manipur and Tripura.

4.13. So far as the scrutiny of applications for setting up new factories is concerned, Government should determine the total number of new factories that should be set up during a particular period of, say, five years and invite applications from all the states. The decision should be based on a comprehensive examination of all these applications in the light of the criteria mentioned in the previous paragraph.

4.14. On the basis of the criteria as specified in para 3.9, the Commission recommends that Regions A, B & C should be generally preferred for the location of new units during the next five years or so. Within these regions again certain districts enjoy greater advantages over others and, in deciding about the location of new units, these differences may be kept in view. Care should be taken that factories are not set up too close to each other. Further, the eastern districts of Uttar Pradesh and the northern districts of Bihar are economically backward and have no mineral resources or other important raw materials on the basis of which major industries could be set up. From consideration of balanced regional development, these areas may be given somewhat higher priority than they would otherwise deserve. The Commission recommends that, for the next five years, no new units should be allowed in those areas where competition from gur and khandsari manufacture is currently acute and where agricultural conditions, at present, are not favourable for substantial increase of sugarcane production. In such of these areas as are considered suitable for sugar industry, necessary corrective action (*e.g.*, irrigation, drainage, varietal improvements, etc.) may be undertaken during the next five years and the question of setting up new factories in these areas reviewed on the basis of changed agricultural as well as economic conditions after that period.

4.15. The Commission has noted that Government has taken a decision to confine the setting up of new units to the co-operative sector. The considerations that seem to have prevailed upon Government in taking such a decision are: (i) impact of agricultural processing units on agricultural development; (ii) wider participation of the farmers in agricultural development; (iii) more equitable distribution of income; (iv) general economic and social development, etc. During the course of its visits to the co-operative factories in Maharashtra, the Commission found that the setting up of a sugar factory had helped significantly in the economic and social betterment of the area around it. For instance, the establishment of one agro-industry, namely, sugar, has enabled the farmer-members of the co-operative sugar factories to set up other agro-industries, such as oil processing, solvent extraction, cotton ginning, power-loom, distillery, poultry farms, etc. Further, the factory has also played a leading role in providing better educational and medical facilities not merely for its members, but for the entire area around it. The setting up of a co-operative sugar factory has, thus, acted as a nucleus for social and economic development of the area around it and has helped to develop a new class of rural entrepreneurs. However, co-operative sugar factories in states other than Maharashtra have not shown similar satisfactory results. In a few cases, the Commission found that the day-to-day working of some of these factories left much to be desired especially in respect of: (a) working results and efficiency of the factory and (b) working relations between the factory management and the workers and growers. The Commission would like to impress upon co-operative sugar factories located in other parts of the country to study closely and emulate developments in Maharashtra.

4.16. While the Commission generally agrees with the Government's policy that new units should be confined to the co-operative sector, it feels that where it is difficult to set up a co-operative factory, the State Government concerned may set up factories either under its own aegis or in collaboration with the joint-stock sector. In the latter case, the State Government may usefully hold the majority share capital so as to have a predominant voice in the management of such a joint venture. The Commission would further recommend that such a joint venture should be given sufficient autonomy in day-to-day management and operations. It also recommends that those sugar factories, joint-stock as well as co-operative, which are found to be badly managed for more than three years, should be taken over and run by Government for a certain number of years and then handed back to the owners subject to certain conditions regarding sound management practices being followed. The Industries (Development and Regulation) Act, 1951, should be suitably amended with a view to facilitating this. Government should also maintain a nucleus technical organisation for this purpose. Since sugarcane is a perishable crop and the fate of a large number of farmers is dependent upon it, Government cannot afford to permit any sugar factory to be mismanaged.

4.17. The Commission has noted that some joint-stock units have recently sought to bring into their fold farmers as shareholders in order to achieve a better identification of interest between the factory and the farmer. It feels that this is a commendable step worthy of emulation by others, but, in order to be really useful, it should be done on a substantial rather than on a token scale.

4.18. A Standing Expert Committee including the Director of the Sugarcane Breeding Institute, Coimbatore, the Director of the National

Sugarcane Institute, Lucknow, the Director of the National Sugar Institute, Kanpur, a representative each of the Department of Food, Ministry of Industry, Planning Commission, Agricultural Prices Commission and two independent experts—one an economist and another a technologist—should be set up to examine the applications for licences for expansion of existing factories and setting up of new factories and advising on their location and site in the light of the technical examination envisaged in para 4.10 and the criteria for licensing mentioned in para 4.12.

# CHAPTER XIII

## REHABILITATION AND MODERNISATION

The Government of India appointed a Committee in June, 1963, to examine the question of rehabilitation and modernisation of the old and uneconomic units in the sugar industry. The Committee on Rehabilitation and Modernisation of Sugar Factories in India (under the chairmanship of S. N. Gundu Rao) submitted its Report in June, 1965. The Government of India requested the Commission to offer its comments on the Report.

### 2. *Recommendations of the Committee*

2.1. The Committee, *inter alia,* made its recommendations on the following main issues: (i) provision of facilities for development of sugarcane cultivation (ii) determination of economic size of a sugar factory; (iii) assessment of need for rehabilitation, modernisation and expansion of uneconomic units; (iv) estimate of financial requirements of and incentives to the industry for the purpose; (v) location of new units; and (vi) continuance or otherwise of Government's policy of control on sugar.

2.2. The Committee has recommended a number of measures for achieving higher per acre yield of sugarcane amongst which the following have been stressed: (i) compactness of the factory area; (ii) distribution of good seed; (iii) provision of irrigation, fertilizer and plant protection facilities; and (iv) propagation of suitable varieties. It has observed that development programme cannot be executed satisfactorily because of the scattered nature of sugarcane cultivation in most factory areas, especially in Uttar Pradesh and Bihar. About 40 per cent of the total cane supply has to be transported over a long distance either by rail or road. The Committee has, however, observed that though Uttar Pradesh, Bihar and Punjab had together the largest area under sugarcane, the supply of cane per grower was the lowest in these states. There are as many as thirty to forty thousand growers in each factory area of Uttar Pradesh and Bihar. The Committee has, therefore, suggested that it would be necessary to bring the cane areas as near to the factories as possible. It has further observed that while in Maharashtra, Mysore, Madras and Andhra Pradesh the system of seed distribution and periodic replenishment by fresh, vigorous and healthy seeds is satisfactory, the same is not the case in Uttar Pradesh and Bihar. The Committee has recommended that every factory should be allowed to have a farm of 500 to 2,000 acres of its own which can be utilised for the purpose of seed propagation, supply and demonstration. The main factor responsible for the low productivity over large tracts of Uttar Pradesh (particularly East Uttar Pradesh) and Bihar is lack of adequate irrigation facilities. The Committee has estimated the requirements for irrigation in Punjab, Uttar Pradesh, Bihar, Andhra Pradesh, and Madras. For instance, about 8,830 tubewells and 27,760 masonry wells have been recommended for Uttar Pradesh. Similar estimates for Punjab and Bihar are about 2420 and 2640 tubewells and 1200 and 4720 masonry wells respectively. In addition, 960 pumping sets have also been suggested for Bihar. The total cost of the above has been estimated at Rs. 70 crores. The requirements of fertilizer and plant protection measures have also been indicated. The financial requirements for irrigation, fertilizer and communication have been estimated by the Committee. For irrigation, the estimated expenditure is Rs. 80 crores, mostly in the form of recoverable loans. The financial requirement for providing adequate communication facilities is Rs. 90 crores to be contributed equally by the Government of India, concerned State Government and the beneficiary. The expenditure by way of loan on manure and fertilizer would be about Rs. 3·7 crores and on subsidy for popularising new varieties of seed, Rs. 1·5 crores.

2.3. The Commission appreciates the detailed analysis made by the Committee of the various problems of sugarcane cultivation and generally endorses the relevant recommendations made by the Committee for action by Government. The Commission did not, however, have the time to scrutinise the financial estimates which may be gone into carefully by the authorities concerned. The Committee has not placed adequate emphasis on the role that should be played by the factories in respect of sugarcane development. The Commission is of the view that the responsibility for sugarcane development rests both on Government and industry.

2.4. The Committee has departed from the usual definition of an uneconomic unit, and, in doing so, it has suggested two different definitions. In the first place, "an uneconomic unit is one in which there is scope for reducing its cost of production". The Committee has further stated that "in the light of this approach in our efforts to assess the scope for reducing production costs, most of the units would be more or less uneconomic. Thus, for example, a small-size unit, which is efficient and modern, has still scope for reducing costs by expansion"*. Second, "in a controlled economy, which in a way is protected, the uneconomic capacity is that which is below the average taking the cost schedule".** The Committee has also stated that "in a free economy, the economic capacity would be determined by the average capacity or, even better, by the capacity of the largest number of units in the region. Naturally in a competing economy, this average would represent the survival capacity". The Committee has also noted that "the economic capacity is not static. In a free economy, capacity rises at a faster rate".** In the light of these considerations and in the context of present capacities obtaining in the country, the Committee is of the view "that a capacity of 1500 tonnes would be a fairly economic capacity under the conditions prevailing at present in India. While, therefore, this 1500 tonnes should be the minimum target for expanding the existing units, new units should have a starting capacity of 1500 or 2000 tonnes with provision for expansion upto 3000—4000 tonnes"* *

2.5. The Commission is unable to accept either of the definitions of an uneconomic unit given by the Committee as mentioned in paragraph 2·4 above. If the first definition were to be accepted, there would be hardly any unit, in any industry, which could be called economic. If the second definition were to be accepted, there would be no distinction between submarginal units and those which lie just below the average and a sizeable number of units would always continue to be uneconomic whatever be the programme of expansion. Further, the Committee has not given any cogent reasons as to why it considers the minimum economic size to be 1500 tonnes as against 1250 tonnes generally accepted so far. Since the Committee's recommendations regarding expansion are based on the above questionable definitions they cannot be accepted without further careful scrutiny. Although the Committee has recommended economic size of a factory to be of the order of 1500 tonnes yet it has, on the one hand, recommended expansion of 17 factories upto 1000 tonnes and 48 factories upto 1250 tonnes; on the other it has recommended expansion of 33 factories upto 1500 tonnes and 37 factories to 2000 tonnes or above. The Committee itself has not, therefore, adhered to its own definition of an economic unit.

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* Report of the Committee on Rehabilitation and Modernisation of Sugar Factories in India, para 1.

***Ibid*, Para 2·2·4.

2.6. The Commission is unable to accept any of the definitions given by the Committee of an uneconomic unit, because it has been found that the managerial efficiency and other factors often play an important role in bringing about overall economy irrespective of the size. For instance, in 1963-64, the net conversion charges per quintal excluding depreciation in a factory with installed capacity of 3000 tonnes located in West Uttar Pradesh were Rs. 13·80 whereas the same for a factory with installed capacity of 725 tonnes located in the same region amounted to Rs. 13·68. Similarly, for a factory with installed capacity of 2250 tonnes in East Uttar Pradesh the net conversion charges per quintal, excluding depreciation were Rs. 17·78; on the other hand, for a factory with installed capacity of 650 tonnes located in North Bihar, the net conversion charges were Rs. 15·34. Again, in Maharashtra, the net conversion charges per quintal excluding depreciation, for a factory with installed capacity of 1700 tonnes were Rs. 11·71 whereas the charges for a factory with installed capacity of 1000 tonnes were Rs. 7·91 only. Such instances could be multiplied. Obviously, it is not merely the size but the managerial efficiency and other factors which determine the level of conversion charges.

2.7. On the basis of the definitions, mentioned in para 2.4 above, the Committee has estimated that a total capacity of about 76 thousand tonnes of cane per day (or about 9 lakh tonnes of sugar per annum) would be required to rehabilitate 152 factories. The break-up of expansion of capacity by size-groups, recommended by the Committee is as follows:

TABLE XIII.1—*Break-up of Expansion of Capacity Recommended by the Committee*

(in tonnes)

| expansion recommeneded upto capacity of | no. of units | existing capacity | capacity already licensed | capacity recommended by the Committee | extra capacity to be provided (col. 5—ccl. 4) |
|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) |
| (*i*) 1,000 tonnes . . . | 17 | 9,725 | 13,560 | 16,800 | 3,240 |
| (*ii*) 1,250 tonnes . . . | 48 | 41,150 | 52,200 | 59,050 | 6,850 |
| (*iii*) 1,500 tonnes . . . | 33 | 32,296 | 43,438 | 49,400 | 5,962 |
| (*iv*) 2,000 tonnes . . . | 23 | 27,533 | 34,655 | 41,250 | 6,595 |
| (*v*) above 2,000 tonnes . . | 14 | 28,433 | 39,219 | 44,050 | 4,831 |
| (*vi*) above 1,200 tonnes but limited expansion upto 300 tonnes . . . . | 17 | 27,330 | 30,474 | 32,000 | 1,526 |
| total | 152 | 1,66,467 | 2,13,546 | 2,42,550 | 29,004 |

Out of 76,000 tonnes recommended for expansion by the Committee, a capacity of 47,000 tonnes has already been licensed by Government. Therefore, the net effect of the recommendations of the Committee would be licensing an additional capacity of 29,000 tonnes for rehabilitation of factories. The Commission has already recommended in Chapter XII that first priority should be given to the expansion of uneconomic units for installed capacity of less than 1250 tonnes per day. According to the Committee's estimate, 36 factories (whose capacity is below 1250 tonnes) would require 8942 tonnes additional capacity for rehabilitation. Further the Commission has also recommended that factories, which could establish that with small expansion, not exceeding 300/400 tonnes, they would become significantly more balanced and economic than now, should be allowed such expansion. The Commission, therefore, recommends that out of 29,000 tonnes of additional capacity required for rehabilitation, about 14,000 tonnes may be licensed during the Fourth Plan period and the balance during the Fifth Plan period.

2.8. The Committee has estimated that an amount of Rs. 90 crores would be required to rehabilitate and modernise 165 factories. Out of this, Rs. 72 crores would be required for providing machinery for expansion of 152 factories. For the remaining 13 factories, the cost of modernisation would amount to about Rs. 18 crores. The financial requirement to bring about the expansion of 152 factories by about 76 thousand tonnes of cane per day may have to be spread over a period of 8 to 10 years. Thus, the Committee has estimated that, on an average, it may be possible to manage with about Rs. 10 crores annually. The Committee recommended that ". . . . a levy at a certain rate may be imposed uniformly all over the country on the sugar consumed in the internal market and collected along with the excise duty as 'Sugar Industry Development Fund' ". This fund is intended for re-imbursement to the factories towards the depreciation on their actual additional investments for rehabilitation and modernisation at a rate to be prescribed by Government.

2.9. The Committee has also recommended that a revolving fund of Rs. 20 crores, to begin with, may be created to meet the loan requirements for the purpose of machinery, etc. The loans may be advanced to sugar factories by Government, and other incentives given, subject to the following conditions:

> "(i) Loans should be given to such factories as are prepared to contribute 1/3rd of total requirements of rehabilitation and modernisation from their own resources; the balance 2/3rd will be given from the revolving fund and that too against supply invoices of the machinery order;
>
> (ii) The factory concerned should provide adequate security as may be specified by the Financial Agency;
>
> (iii) Interest should be 1 per cent above the Reserve Bank rate, but no interest should be charged for the first 3 years:
>
> (iv) Loans should be paid back in twelve equal annual instalments, the first instalment commencing from the fourth year;
>
> (v) Deferred-payment facilities should be provided to sugar machinery manufacturers so that the same facilities can be passed on to sugar factories who will place orders for machinery on these manufacturing units;

(vi) In order to scrap the old units and put new ones at a heavy investment, some special incentives should be given. These incentives are:

(a) increase in development rebate from the level of 20 per cent to 40 per cent as allowed in the case of shipping and coal industries;

(b) exemption of purchase tax for a period of 3 years; and

(c) tax-holiday for a stipulated period over a stipulated income.

(vii) The policy of controls should continue till such time as weak and high-cost units are completely rehabilitated and modernised."*

2.10. For the reasons mentioned in Chapter IX, the Commission agrees that there is need for providing special loan assistance to the industry for the purpose of rehabilitation and modernisation. It feels, however, that there is no need for creating a special financial institution for the sugar industry. Government may consider providing finances for rehabilitation and modernisation through the existing financial institutions, such as Industrial Development Bank and Industrial Finance Corporation and place additional funds at their disposal. It should not be difficult to provide such funds from the proceeds of the excise duty which amounts to at present about Rs. 85 crores per annum. If necessary, however, the rate of excise duty may be increased to some extent.

2.11. The Commission could not examine the details of the overall financial requirements as estimated by the Committee due to paucity of time. The Commission, however, would emphasise that loans should not be given to all the units as a matter of course. The application of each unit should be examined at technical level regarding the economics of rehabilitation. Priority should be given to the expansion of such units as are below the economic capacity of 1250 tonnes. The Commission does not agree with the recommendations of the Committee regarding grant of loans on concessional terms, for the reasons explained elsewhere in the report. The financial institutions may, however, extend concessions like deferred payments of interest and principal. Since loans and deferred payment facilities will be provided from the financial institutions directly to the factories, the Commission does not consider it necessary to extend these facilities to the sugar machinery manufacturers just for being passed on to the former.

2.12. The Commission is unable to accept the recommendations of the Committee with regard to grant of special incentives to enable the old units to be scrapped and, instead, new units to be set up. It is of the view that factories, making substantial investment on rehabilitation, modernisation and expansion, should be treated at par with new factories for such assistance, concessions or incentive as may be generally given by Government from time to time.

2.13. The Committee has also recommended that it would be in the interest of the industry and the economy of the region to instal new plants of bigger capacity by merging present small-size factories located in proximity of one another. The Committee has estimated that instead of 70 units, most of which are below 1200 tonnes capacity, 34 units ranging from 2000 to 4200 tonnes could be set up by merging the above 70 units. It would involve an investment of Rs. 65.7 crores. The Committee, however, has stated that, to begin with, the units which belong to the same management should be allowed to merge and have single large-size unit. The Commission would like to endorse this suggestion of the Committee for consideration by Government.

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*Op. Cit. para 4.2.2.

2.14. The Commission feels that it would be possible for most of the uneconomic units to rehabilitate themselves on the basis of loan and other assistance recommended by it. If, however, any unit is unable to rehabilitate within a reasonable period, say, three years, of the offer of such assistance and demands special subsidies or other concessions, Government should consider nationalisation in the social interest, especially in the interest of growers, and undertake necessary rehabilitation and modernisation measures. Alternatively, Government may consider becoming the majority shareholder in the company and running it as a joint venture as a pre-condition for providing the required financial assistance.

2.15. Regarding the Committee's recommendations about the continuance of the policy of control on sugar till such time as weak and high-cost units are completely rehabilitated and modernised, the Commission is of the view that decision regarding continuance of control on price and distribution of sugar should rest primarily on considerations other than the protection of weak and high-cost units. In case Government decides to decontrol sugar, there may be some units which may have to be given some assistance on broader social considerations. If the policy of buffer stock and excise rebate, as recommended by the Commission in Chapter IX, is accepted by Government, there should not ordinarily be any need for such assistance.

2.16. The Committee has suggested that the most rational approach to the problem of location of any production unit must be on the basis of productivity, cost of production and production potential. It has suggested, further, that these criteria should be supplemented by social considerations and also the need for regional self-sufficiency while deciding upon the location of new units. The Committee has accordingly concluded that "in spite of the desirable shift of future production to the more productive regions in the South, the country will have to depend for a long time to come for its major requirements of sugar on the Northern Region". Adequate number of large-size units for export of sugar should be set up near the coastal areas. Government should sponsor a few big units, integrated with by-product industries, such as, distilleries and paper pulp units. The Commission has discussed the problem of location of new units on the basis of appropriate technical, economic and social criteria and has also examined the question of setting up of big units. The Commission has recommended in Chapter XII that well-defined criteria should be laid down and adhered to rigidly by Government before deciding upon the location of new sugar factories. The criteria should be: (a) agro-climatic consideration; (b) comparative advantage of growing sugarcane *vis-a-vis* competing crops; and (c) the cost of transport from the neighbouring surplus sugar producing area to the area in which it is proposed to set up a new factory. Apart from the cost, difficulty of transport will also have to be taken into account in the case of Assam, Manipur and Tripura. The Commission's recommendations regarding the location of new factories are given in paragraphs 4·12 to 4·14 in Chapter XII.

## PART V

# CONCLUSIONS AND RECOMMENDATIONS

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## CHAPTER XIV

# CONCLUSION

The rate of growth of sugarcane production in India during the last three Plan periods has been higher than that of most other crops. The rate of growth of the sugar manufacturing capacity also compares favourably with that of most other industries. By and large, farmers have earned higher returns per acre from sugarcane than from competing crops; also the profits earned and reserves built up by the industry have been reasonably good. There are, of course, wide variations; some farmers and some factories have at times even suffered losses. But, on the whole, cultivation of sugarcane and manufacture of sugar have been quite attractive. This is reflected in the steady increase in the acreage under sugarcane and large number of applications for licences for the expansion of old factories and setting up of new ones.

2. A serious problem for the industry, however, has been its chronic instability. There has been an alternation of increases and decreases in production and prices over short periods, resulting in wide-spread difficulties for consumers and producers.

3. Some of the causes of this instability are natural and others man-made. The natural causes relate primarily to factors like weather, pests and diseases, which influence the size and quality of the sugarcane crop. The man-made factors relate to price of sugarcane *vis-a-vis* that of competing crops, prices of gur and khandsari *vis-a-vis* that of sugar, and Government policy regarding price and distribution of sugar and licensing of sugar factories. Man-made causes have often synchronised with natural causes to accentuate the instability. Sometimes, the so-called measures for stabilisation have themselves prevented a return to normalcy and tended to prolong the instability. Short-term palliatives have postponed long-term remedies. Ad-hoc measures to deal with specific problems as they arose from time to time have only too frequently militated against comprehensive solutions being sought. In fact, 'ad-hoc-ism' has been one of the worst man-made causes of the instability faced by the industry. In the absence of a well thought out comprehensive long-term policy, decisions taken in regard to prices, production, controls and licensing have only too often been influenced by competing interests.

4. The real remedy of the problem facing the sugar industry should, therefore, tackle the basic causes, natural as well as man-made. The natural causes may take a somewhat longer time to be remedied. The man-made causes can be corrected more quickly, but, since these causes have fairly deep roots, it may be difficult to correct them unless a comprehensive policy based on well-defined principles, is formulated and implemented firmly, and short-term or sectional considerations and concomitant 'ad-hocism' in policy are definitely eschewed.

5. The recommendations made in this report aim precisely at the formulation of such a comprehensive long-term policy. In recognition of the

fact that a sudden break from the immediate past may not be possible or desirable in certain cases, some transitional measures have also been suggested. But these should not be regarded as any more than transitional and should not be used as an excuse for continuing the undesirable features of the present policies; the transition should be the shortest possible.

6. The long-term recommendations of the Commission have been presented as a self-contained package, as it were. The various components of this package have no doubt their own individual merits and demerits looked at from sectional points of view. But, taken together, they make a balanced whole, individual components supplementing one another. The package should, therefore, be considered in its entirety and not piece-meal.

7. It is possible that arguments would be advanced for rejecting some and accepting other components of this package. But, the Commission would urge that the merits of the package should be judged taking it as a whole and not on the basis of separate and isolated consideration of its individual components. It would be most unfortunate if there were an attempt to pick and choose individual components of the package to suit the convenience of particular interests. In matters pertaining to sugar and sugarcane, there are too many conflicting interests and if policy becomes a victim of sectional interests, it would mean a surrender to the vicious circle of 'ad-hoc-ism' and a perpetuation of the most serious man-made cause of instability.

8. So far as the natural causes of instability are concerned, the remedial measures have to aim at reducing the adverse effects of weather, pests, diseases, etc., on the sugarcane crop and improving its yield as well as quality. The recommendations made by the Commission in the chapter on Research and Development are designed to achieve this objective. The Commission has recommended, *inter alia,* that efforts should be made to ensure proper supply of the required amount of input factors, like fertilizers, pesticides, water, etc., and, at the same time, develop a proper extension agency for the purpose of ensuring healthy and clean cultivation. Soil testing laboratories should be set up and the testing done without any charge from the growers. Sugarcane Liaison Farms, similar to the ones existing in Andhra Pradesh, should be set up in other sugarcane growing states also. High priority should be given to the provision of irrigation and drainage facilities in the sugar factory areas. The evolution of early, mid and late varieties suitable for different regions and their propagation with the help of appropriate incentives should be expedited. In consultation with the Sugarcane Breeding Institute, Coimbatore, and the State Governments, the Government of India should draw up a list of approved varieties for different states and the list should be reviewed from time to time. The cultivation of unapproved varieties should be discouraged by adopting appropriate control measures, and also prescribing that the minimum price fixed for sugarcane would either not apply to the unapproved varieties or be subject to a sufficiently large discount, say, 20 per cent. The factory areas should be made more compact. Pending delimitation of the factory areas, the development work should be intensified in the Intensive Development Blocks and the propagation of unapproved varieties within such blocks should be statutorily banned. In the remaining part of the reserved area, the factory management should be given an opportunity to take up development work on its own with financial assistance on a *pro rata* basis out of the funds earmarked for that area. Construction of roads

and provision of adequate transport facilities should be given very high priority in the development programmes of both the states and the factories.

9. One serious cause of instability in the sugar industry is the diversion of sugarcane away from the sugar factories to gur and khandsari manufacturers in the factory area itself. The Commission feels that sugar, gur and khandsari are eminently suitable for being dealt with from the approach of 'common production programme' which has been accepted by Government for certain other industries. From this standpoint the Commission has suggested, in the chapter on Gur and Khandsari, certain measures for the improvement and stabilisation of the gur and khandsari industry, on the one hand, and reducing the competition for sugarcane between the sugar factories and gur and khandsari manufacturers in the sugar factory areas, on the other. In this context, the Commission has recommended the following measures:

(i) Re-delimitation of the reserved areas so as to—
  (a) make them more compact; and
  (b) either exclude the existing khandsari units and power-crushers completely from reserved areas or provide adequate cane supply to both the sugar factory concerned and such khandsari units or power-crushers as already exist in the reserved areas;

(ii) Licensing of all the existing-khandsari and power-crusher units and banning of new units in reserved areas of sugar factories or within an area of 15 to 20 km. around a sugar factory;

(iii) Shifting of all the existing khandsari and power-crusher units from the intensive development blocks;

(iv) Imposing excise duty or some other suitable levy (if necessary on a compounded basis) on khandsari units and power-crushers and (if possible 'kolhus' above a certain size) upto such a level that their ability to pay a price for sugarcane higher than that fixed by Government for sugar factories is restricted;

(v) Enforcing the existing procedure for regulating the supply of sugarcane grown in reserved areas to sugar factories through co-operative cane unions, where they exist, also in the case of cane supplies to khandsari units and power-crushers.

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10. Among the man-made causes of instability, frequent and *ad-hoc* changes in policies regarding prices, zones and distribution deserve special attention. Emergence of acute shortages at one time and surpluses at another has led to an alternation of control and decontrol during the last fifteen years. The Commission has come to the conclusion that although in an important sense the imbalances in the industry have been caused by the fluctuations in the size of the cane crop, they have often been aggravated by the policy measures that followed them. Outstanding amongst the defects of the present system of control is its partial character in the sense that it applies to sugar but leaves gur and khandsari free. By controlling sugar prices on a level determined, in the main, by the minimum price of cane, it makes the minimum price a fixed price, thereby sapping the capacity of the sugar industry to compete with gur and khandsari for the

limited cane supplies. Wherever gur competition becomes acute, the sugar industry presses for the linking of cane price to be paid by factories with gur price or for decontrol of sugar. The situation is, therefore, sought to be alleviated by Government, *inter alia,* through *ad hoc* measures that allow some sugar producers to pay a higher cane price or offer protection to a hard-pressed region by raising the all-India minimum price of sugarcane and with it the level of sugar recovery for which it is fixed. The former gives rise to complaints of regional discrimination and the latter runs counter to the long-term considerations of efficiency in cane cultivation. The industry is often provided further protection by increasing the number of zones for which sugar prices are fixed; the number of these zones has increased from four recommended by the Tariff Commission in 1959 to seventeen in 1962, twenty in 1964 and twenty-two in 1965. This tendency towards an increase in the number of zones is tantamount to a drift in the direction of 'cost plus' basis of price fixation and is, therefore, injurious to the growth of efficiency in the industry. The demarcation of zones ceases to rest on some stable principles; their constant reshuffling makes them so much a function of *ad hoc* considerations as to invite complaints of discrimination from, and create uncertainty for, the industry. The same 'ad-hoc-ism' characterises the policy of distribution giving rise to complaints from the industry, trade and State Governments.

11. The Commission is constrained to observe that there is hardly any aspect of present policy pertaining to sugar which is not affected with the evil of 'ad-hoc-ism' the injurious consequences of which can hardly be over-emphasised. And the reason for it is the excessive pre-occupation of the executive authorities with the immediate, unmindful of the long-term effects of their actions. For remedying these defects it is essential that the agency entrusted with the task of formulation of policy should be separated from that responsible for its implementation.

12. As has been mentioned earlier, stability is a vital need of the sugar economy. The objective of stability is three-fold: that of ensuring adequate sugarcane supplies to the factories in years especially of short crops, of protecting the sugarcane grower (in respect of price and disposal of his crop) in years especially of bumper crops, and of ensuring a steady flow of sugar supplies to the consumer at relatively stable prices through years of large as well as short crops. The task of an integrated policy for the sugar economy is to realise these objectives in such a way that it helps promote efficiency in sugarcane cultivation and the sugar manufacturing industry. And, it is no less important that it should be based on well-defined principles to guide and limit the area of discretion for those who execute that policy.

13. The Commission has suggested in the chapter on Price Policy for Sugar and Sugarcane two alternative approaches to the problem—the first one consists of the replacement of the present system of direct controls, with all their defects, by instruments of indirect stabilisation. The other consists of continuance of the present system of controls but with the improvements in those aspects where it is found most wanting. The Commission would like to reiterate that each alternative has its own logic and requirements in terms of specific measures and that, for its successful operation, each set of inter-related measures needs to be treated as a package, as it were, to be implemented, not piecemeal, but as a whole.

14. The first alternative involves, in practice, decontrol of sugar supplemented by a buffer stock policy. In view of the perishability of the cane crop and the weaker bargaining power of the sugarcane growers *vis-a-vis* sugar manufacturers, the fixation of a minimum price for cane is both desirable and necessary. This minimum price, however, will need to be derived from the minimum price fixed for sugar. However, the decontrol of sugar price, by leaving the cane price free to vary above the prescribed minimum level, will help maintain the parity between the price of cane to be paid by sugar factories and manufacturers of gur and khandsari and thus reduce fluctuations in sugar output. But, so long as the size of the sugarcane crop continues to fluctuate, it may not, as has been the experience in the past, eliminate them. To iron out the remaining imbalance between the demand for and supply of sugar, the decontrol of sugar price needs to be supplemented by a buffer stock policy in sugar. Further, the flexibility of sugar price, though necessary to enable the sugar industry to compete with gur and khandsari for the available supplies of cane, needs to be confined within certain limits. To enable the industry to pay the minimum price of cane to the growers it is necessary to prevent sugar prices from falling below a certain level, just as to protect the interests of the consumers they must be prevented from piercing the ceiling. And both the above objectives can be realised through a buffer stock policy in sugar. Such a policy will allow the sugar prices to fluctuate within the limited range, given by the minimum and maximum prices fixed for sugar. Sugar will be acquired and stocks accumulated when sugar prices threaten to fall below the minimum and it will be sold, depleting the stocks, when prices threaten to rise above the maximum. The minimum and the maximum prices will be determined on the basis of what may be called the 'pivot' price for sugar to be calculated on the basis of either a five-year or at least three-year moving average of sugar prices. The range of fluctuations to be allowed in the sugar price may be fixed at plus or minus 8 per cent of the 'pivot' price.

15. The Commission is of the view that initially the stock of sugar required for a change-over to such a policy of decontrol from the present policy of control should be of the order of 12 lakh tonnes. The year 1964-65 is expected to close with a stock of 6·09 lakh tonnes of sugar. Considering the information available so far about the prospects of the sugarcane crop in 1965-66, it should not be difficult to add another 6 lakh tonnes to stocks next year (provided the Commission's recommendation regarding excise-rebate is implemented) and build up a total stock of 12 lakh tonnes by the end of October, 1966. Since this stock will get depleted in lean years and get replenished in good years, the annual stock required to be held, on an average, is likely to be significantly lower than 12 lakh tonnes and may be assumed to be of the order of 8 lakh tonnes.

16. The buffer stock should consist of two parts: one which the industry should be obliged to hold and the other which should be held by the buffer stock agency. The control over the releases of both, however, should be exercised by the buffer stock agency. The Commission recommends that the industry should be subjected to the statutory obligation of carrying stocks which shall, at no time, be less than 20 per cent of its total production in the preceding season. In addition, the buffer stock agency will undertake to buy sugar from any factory which wishes to sell at the floor price and sell sugar to any wholesale dealer who wishes to

purchase it at the ceiling price. However, when the agency is actually called upon to buy, it may, if it so desires, pay to the factory for the quantity purchased without physically lifting this quantity; it will then merely keep a record of the stock it holds with the different factories. The Commission would like to emphasise that under this alternative the exercise of control on sugar should be strictly confined to the buffer stock in sugar and should, on no account, extend to the remaining sugar output, which the factories should be free to market whenever and wherever they like. This is because the decontrol of sugar price when accompanied by a control on the releases of the entire output of sugar tends to run counter to the interests of the consumers and in favour of the producers. It prevents the realisation of the most important advantages of the competitive mechanism in promoting efficiency and reducing thereby the cost of production. It also retains all the defects emanating from 'ad-hoc-ism' and suspicion of discrimination connected with the administration of control.

17. In addition to the above measures, the Commission recommends the continuation of a system of rebate on excise duty on sugar even in a period when the price of sugar is relieved of direct control and subjected only to indirect regulation through a buffer stock policy in sugar. Such a system of rebate is designed to secure three purposes: (i) to encourage production of early and late maturing varieties and maturity sowing and harvesting; (ii) to provide an opportunity to wrongly located factories to improve cane production in their areas; and (iii) to create an inducement for the industry to achieve full, or even over-full, utilisation of capacity and thus secure a progressive increase in production. Such part of the rebate as may not be passed on to the growers should be constituted into a development fund to be used, *inter alia,* for cane development work. The nature and *raison d'etre* of this rebate has been explained in detail in paras 2.21, 5.2 and 5.3 of Chapter IX.

18. As for the machinery required for the implementation of the above policy, the Commission recommends that Government should operate the buffer stock policy through the instrumentality of the Food Corporation of India and with the advice of the Agricultural Prices Commission.

19. The second alternative which the Commission has discussed involves the continuance of controls on sugar subject to the following modifications:

(i) The number of zones for fixation of ex-factory prices of sugar should be limited to the following five:

Zone I : Gujarat, Maharashtra, North Mysore and North Andhra Pradesh.

Zone II : Orissa, rest of Andhra Pradesh, South Mysore, Madras, Pondicherry and Kerala.

Zone III : Meerut, Muzaffarnagar and Bulandshahr districts of West Uttar Pradesh, Punjab, Rajasthan and Madhya Pradesh.

Zone IV : Central and rest of West Uttar Pradesh.

Zone V : East Uttar Pradesh, Bihar and West Bengal.

Assam may be treated as a zone by itself on account of its location.

(ii) The prices should be based on the cost schedules as given in Chapter X. Although the cost schedules are intended to serve primarily as the basis for price fixation during the period of control, they may also be kept in view during the period of decontrol while negotiating such purchases as may be necessary, *e.g.*, for fair price shops, defence services and exports. It may be mentioned that the manufacturing cost (excluding the basic cost of cane) for 10 per cent recovery and 130 days duration works out to Rs. 31·39 per quintal for Zone I, Rs. 27·59 for Zone II, Rs. 25·79 for Zone III, Rs. 26·37 for Zone IV and Rs. 27·44 for Zone V. The price for Assam should be fixed by adding to the price fixed for Zone V, the cost of railway transport from North Bihar to the factory site in Assam.

(iii) The price for sugarcane should be fixed in such a manner that there is no diversion of acreage from foodgrains to sugarcane. Keeping in view the emergency in particular, the Commission recommends that the minimum price for sugarcane for the season 1965-66 should be fixed, if possible, at Rs. 4·96 per quintal (Rs. 1·85 per maund) for 9·4 per cent recovery subject to an increase of 4 paise per quintal (1·5 paise per maund) for every 0·1 point increase in the recovery above this level. In any case, for the season 1966-67, the price should be fixed at Rs. 4·84 per quintal (Rs. 1·80 per maund) for 9 per cent recovery subject to an increase of 5·4 paise per quintal (2 paise per maund) for every 0·1 point increase in the recovery above this level and announced by the end of December, 1965. The Commission considers the present price of Rs. 5·36 per quintal (Rs. 2 per maund) for 10·4 per cent recovery to be highly detrimental to improvement in the quality of sugarcane and has suggested the above progressive reduction in the minimum recovery and increase in the premium for higher recovery with a view to encouraging cultivation of improved varieties.

(iv) A certain margin for manoeuvrability should be provided to the sugar factories in their competition with the gur and khandsari producers through a rebate on excise duty on sugar, the rebate being applicable to the entire year's production and calculated on the following basis:

| | |
|---|---|
| (a) On the first 10 per cent over 90 per cent of the 'effective production capacity' | 20 per cent |
| (b) On the next 10 per cent | 40 per cent |
| (c) Balance | 50 per cent |

Such portion of the rebate as may not be passed on to the growers through price or transport charges for cane should not be included in profit and should be constituted into a development fund for the factory concerned to be earmarked *inter alia* for sugarcane development work. The *raison d'etre* of the scheme of rebate during a period of controls and other details have been explained in paragraph 3.11 of Chapter IX.

(v) In years of short cane crop, releases of sugar should be stepped up at the time of Dussehra or Diwali whichever happens in the year concerned to be nearer the time when *kolhus* are set up for gur manufacture so as to discourage the setting up of *kolhus* in the factory areas. Further, the farmers who supply cane to the factories in areas where gur competition is specially acute should be issued the same sugar ration as is allowed to people in urban centres.

(vi) The machinery for the distribution of sugar in a period of control should be as far as practicable the same as exists for the handling of foodgrains.

(vii) The releases and movement of sugar should be managed by the Food Corporation of India. The export policy should continue to be decided by Government as at present but its implementation should be handed over to the State Trading Corporation of India. The Agricultural Prices Commission should be entrusted with the task of (a) fixing the prices for sugar and sugarcane, (b) reviewing the zones, whenever necessary and (c) advising on stock policy.

20. In view of the present emergency and the fact that the requisite stock of sugar is yet to be built up, the Commission recommends the continuance of control on the lines of the second alternative during 1965-66. Every effort should, however, be made to augment the present stock so as to reach a size of 12 lakh tonnes by October, 1966 and to change over to the first alternative from the beginning of 1966-67 season.

21. The Commission has emphasised the desirability of encouraging the production and consumption of off-colour (or double cured raw) sugar along with that of white sugar. The production of off-colour sugar by helping economise the consumption of sulphur will save valuable foreign exchange. Unlike in the case of white sugar, the molasses produced as a by-product of off-colour sugar are edible and constitute a valuable cattle feed. The off-colour or double cured raw sugar of 99·4 pol has a fairly good keeping quality and does not, in respect of taste, compare unfavourably with white sugar. In view, however, of the consumer's preference for white sugar, the consumption of off-colour sugar will have to be encouraged through necessary publicity and an adequate price differential between the two types of sugar. The latter can be achieved by having two different rates of excise duty on white and off-colour sugar and keeping the rate on the former sufficiently higher (say, by 25 paise per kilo) than that on the latter. The Commission has prepared separate cost schedules for raw (off-colour) sugar.

22. In discussing the licensing policy the Commission has estimated the requirement of sugar for internal consumption at 37·6 lakh tonnes in 1970-71 and 53·4 lakh tonnes in 1975-76, and the export demand at 7·5 lakh tonnes in 1970-71 and 10 lakh tonnes in 1975-76. The total demand for sugar thus works out to 45.1 lakh tonnes in 1970-71 and 63.4 lakh tonnes in 1975-76. The Commission is of the view that exports of sugar should not only be continued but also augmented and efforts should be made to obtain as large a quota as possible under all the three agreements. It has also suggested that, in order that export markets for both molasses and alcohol are properly developed, export policy for both should be liberalised.

23. The Commission has recommended that for the present minimum economic size of a sugar factory should be fixed at 1250 tonnes of cane crushed per day with provision for expansion to 2000 tonnes. The question of minimum economic size of a sugar factory may be reviewed at intervals of, say five years in the light of further developments in sugar technology.

24. Against the target of additional capacity of 30·5 lakh tonnes to be installed between 1965-66 and 1975-76, about 12·8 lakh tonnes (including 3 lakh tonnes already licensed) should be reserved for new units and 12·8 lakh tonnes (including 6 lakh tonnes already licensed) for the expansion of existing units. The decision about the remaining 4·9 lakh tonnes may be taken only towards the end of the Fourth Plan period in the light of export prospects and the recommendations of the Committee which has been appointed by Government to look into the question of establishment of large scale factories for export purposes.

25. Out of the capacity to be set aside for expansion of existing units, first priority should be given to the expansion of uneconomic units having installed capacity of less than 1250 tonnes per day. The uneconomic units located in unfavourable areas may be asked either to merge so as to operate more efficiently or to shift, preferably within the same state, to areas better suited to sugarcane cultivation. In case neither of the above is feasible, the State Government should undertake immediately special measures for the development of sugarcane cultivation in the reserved areas of the factories and in the light of the improvements made, expansion may be considered after five years.

26. The additional capacity of 3.5 lakh tonnes (45.0—41.5 already licensed) to be created during the Fourth Plan period should be distributed between (i) new units of 1250 tonnes and (ii) expansion of uneconomic units to enable them to expand to a capacity of 1250 tonnes. If any balance is left, it may be issued against the genuine demand for small expansion, say, 300/400 tonnes for those factories which, with such an expansion, will become more viable. The question of issue of licences for substantial expansion of factories above 1250 tonnes may be considered only against the additional capacity to be created during the Fifth Plan period. The additional capacity to be licensed during the Fifth Plan period would be 18 lakh tonnes, of which 4·9 lakh tonnes may be reserved for allotment in the light of recommendations of the Committee appointed to examine the size and location of large-size factories for export purposes and the balance distributed equally between new factories (in the co-operative or State sectors) and expansion of old plants. The reserving of 4·9 lakh tonnes capacity may also serve as a cushion in case actual exports fall short of the targets mentioned earlier.

27. The Commission recommends that well-defined criteria should be laid down and adhered to rigidly by Government before it decides upon the location of new sugar factories. These criteria should be: (a) agro-climatic conditions, (b) comparative economic advantage of growing sugarcane *vis-a-vis* competing crops and (c) consideration of freight advantage from a surplus sugar producing area to the area in which it is proposed to set up a new factory. Government should determine the total number of new factories that should be set up during a particular period of, say, five years and invite applications from all the States. The decision should be based on a comprehensive examination of these applications in the light of the criteria mentioned above.

28. The new units should be located mainly in Maharashtra, Gujarat, Mysore, Madras, Andhra Pradesh, South Madhya Pradesh, interior Orissa, Uttar Pradesh and Bihar during the next five years as these regions have a decided comparative advantage at present over the others, from agro-climatic and economic standpoints. In the other regions where agro-climatic

conditions or comparative economic considerations are unfavourable at present, appropriate development measures may be taken in such areas which seem promising and the question of setting up new factories in these areas may be considered at the end of the Fourth Plan period.

29. While agreeing generally with Government's policy that new units should be confined to the co-operative sector, the Commission feels that where it is difficult to set up a co-operative factory, the State Government may set up factories under its own aegis or in collaboration with the joint-stock sector. In the latter case, the State Government may hold majority share capital so as to have a predominant voice in such a joint venture.

30. Those sugar factories, either joint-stock or co-operative, which are found to be badly managed should be taken over and run by Government for a certain number of years and then handed back to the owners subject to certain conditions regarding sound management practices being fulfilled. The Industries (Development and Regulation) Act, 1951, may be suitably amended for this purpose.

31. The industry's contention that under the present system of determining sugar prices on the principle of average for a zone, there is no incentive for heavy investment in block, does not seem to be well founded. In recent years of control, in spite of sugar prices having been fixed on zonal basis, there has been a substantial addition to capacity even in the sub-tropical belt. Further, a study of the old and new factories reveals that in the total cost, there is hardly much difference between the cost of production in the old factories where the element of depreciation is low and that in the new factories where its incidence is heavy. In an old unit while the capital cost is lower, the recurring cost is often higher; in a unit of comparable capacity it tends to be the opposite. What the industry ought to be concerned with is the ultimate ex-factory price.

32. The Commission feels that an appropriate way of giving assistance to old units for rehabilitation and modernisation would be to arrange for them loans, where necessary, and extend to them the development rebate on the investment on the authorised programme for rehabilitation, modernisation and expansion on the same basis as for new units. The Commission recommends that Government should consider providing finance for rehabilitation through the existing financial institutions like the Industrial Development Bank and the Industrial Finance Corporation. Additional funds to the extent necessary may be provided by Government through the existing financial institutions at normal rates of interest. Loans should not be, however, given to all the units as a matter of course. The application of each unit should be carefully examined from the technical as well as economic point of view. Priority should be given to the expansion of such units as are below the economic capacity of 1250 tonnes. Where the cost of rehabilitation and modernisation is very high relative to the cost of a new plant, the desirability of replacing the old plant by a new plant should be examined. If for any reason a particular factory, which is to be rehabilitated in order to serve as an economic unit in the industry, fails to take advantage of these facilities within a reasonable time, Government should consider taking it over or running it as a joint venture in the social interest, especially of the growers, with a view to rehabilitating, modernising and, if necessary, expanding it.

33. The Commission hopes that buffer stock, export and licensing policies will be used in an integrated manner to minimise not only the short-term instability but also to ensure in the long run a balanced growth for the industry. The licensing policy, in particular, may be used to ensure such structural changes as would help achieve the general objective of the needed growth accompanied by stability.

S. R. SEN
*Chairman.*

S. C. CHAUDHRI
N. KRISHNAN
S. C. GUPTA
DHARM NARAIN
*Members*

P. K. MUKHERJEE,
*Secretary.*

NEW DELHI;
*October* 21, 1965

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## ANNEXURE

### I. *Note submitted by Shri S. C. Gupta*

### 1. *Governance of the Sugar Industry*

Sugar Industry is an important agro-based industry and its smooth running has a tremendous influence on the economy of the country. That is why ups and downs in the industry during the last three decades have been the subject of so much public interest. The industry has many facets and any neglect or inadequate attention on any one aspect reflects adversely on other aspects. Thus, the lessons drawn from the fortune of the industry in the past show that an extremely streamlined and co-ordinated approach is necessary to solve the problems of the industry. The problem has become somewhat more complex recently because of the deliberate policy of Government to step up exports of sugar in the national interest even at the present high loss. In view of this, asking a number of agencies like the Agricultural Prices Commission, Food Corporation of India, State Trading Corporation of India, etc., each one to handle a specific aspect of the industry will not be, I am afraid, conducive to its smooth function and could lead to difficulties in actual operation. It is not clear whether these agencies will be allowed the freedom to formulate their own policies or will only make recommendations to Government. If the latter is going to be the case, this would need maintenance by Government of an organisation of their own to examine and co-ordinate the policies and work of the various agencies. This is bound to result in delays and would also not give freedom of action to the various agencies. In the circumstances, I am of the view that it would be more practicable to entrust the entire work relating to the marketing of sugar in India and abroad to one centralised special agency. The agency could be given necessary powers to take decisions including recouping the loss on exports from consumers, industry and Government, in accordance with such policy directions as may be given by Government from time to time.

### 2. *Economic Capacity*

The capacity of a sugar factory, which may be considered as economic, is difficult to determine. This is because profitability of a factory depends on a number of factors. For example, a comparatively small factory situated in a favourable region might work successfully, while the working of a much larger factory in a different area might not be so successful. By and large, however, it is recognised all over the world that a larger capacity factory will be able to withstand competition better than a smaller unit under similar conditions, for the simple reason that most of the expenses on capital outlay, wages, administration, etc., will get reduced. In view of these considerations the concept of what an economic size should be has undergone rapid change during the last three decades. When sugar factories were first established in the early thirties, a factory of about 400 tons daily capacity was considered a viable unit. This was later raised to 600, 800 and finally to 1,000 tonnes during the Third Plan period and all new factories then licensed were for this capacity. The minimum economic capacity is now to be raised to 1,250 tonnes but it would not be quite correct to refuse larger sized factories if availability of sugarcane warrants this. I feel that the future policy should be one to allow licensing of new factories having a capacity anything from 1,250 to 2,000 tonnes on merits of each case. Similarly expansion in existing units should be allowed to the maximum extent possible depending on availability of sugarcane in their areas of operation. I may add, this will not only increase productivity but also enable the factories concerned to modernise and rehabilitate their existing old plants and machinery. Any reduction in costs brought about through expansions would reduce losses on sugar exports.

S. C. GUPTA
21-10-1965

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## II. *Note submitted by Dr. S. R. Sen, Shri S. C. Chaudhri, Shri N. Krishnan and Dr. Dharm Narain*

We regret that at the time of signing the report, our valued colleague, Shri S. C. Gupta, thought it fit to append a note which we had not had the opportunity to consider earlier. We find it necessary to append this note giving our views on the two issues raised by him.

### 1. *Governance of the Sugar Industry*

Shri Gupta seems to favour the establishment of a specialised agency to deal with all aspects of the sugar industry but in the operational part advocates only the centralisation of the entire work relating to the marketing of sugar in India and abroad in one specialised agency.

The very fact that the Food Corporation of India has been set up reflects the realisation in Government that the task of distribution of foodgrains can be efficiently handled only by a non-departmental agency. Agreeing with this line of thinking in the context also of sugar, we are convinced that the specialised agency, Shri Gupta has in mind, will need to be a corporation. The important question then is: whether the internal and external distribution of sugar should be centralised in the same corporation or should be handled by different corporations specialising in what are two different types of activity. In this connection we feel that if there is decontrol of sugar, no specialised marketing organisation would be necessary for internal distribution of sugar except for the limited purpose of buffer stock operations in this commodity. And if there is control, the Food Corporation of India and the State Civil Supplies Departments, which are handling the much larger problem of marketing foodgrains, are best suited to look after the marketing of sugar also. In fact, the functions of the Food Corporation of India as laid down under the Food Corporation Act, 1964, include the purchase, storage, movement, transport, distribution and sale of other foodstuffs also. This would not only economise overhead expenses, but also ensure a better co-ordination in the use of the available transport and storage facilities for foodgrains as well as sugar. Export of sugar is quite a different business as compared to the internal marketing of sugar. It requires constant touch with foreign markets and will, therefore, involve large additional overhead expenditure if it is to be done by a new agency separate from the State Trading Corporation of India. We do not see either the need or the justification for setting up a special commodity organisation for sugar alone, which is bound to be a more expensive proposition without yielding any commensurate additional benefit.

Turning to the wider question of the centralisation of all matters relating to different aspects of the sugar industry in one agency, we wish to underline the following important considerations which weighed with us in expressing ourselves against it :

(i) It is necessary to look upon the fixation of sugarcane prices as part of the wider problem of the fixation of agricultural commodity prices generally. This task which has to be performed with due regard to the appropriate relationship between these prices requires a total view and has, therefore, been entrusted to the Agricultural Prices Commission. Apart from the above consideration, we feel also that the question of the fixation of sugarcane prices should, as far as possible, be kept away from the very obviously strong pressures which surround it. For both these reasons we cannot think of an organisation better suited for the purpose than the Agricultural Prices Commission.

(ii) An important consideration which weighed with us in recommending against the centralisation of all aspects pertaining to sugar in one agency is the danger of concentrating excessive power in dealing with economic matters in the hands of a single authority. Shri Gupta advocates that this special agency be given the powers to take decisions including recouping the loss on exports from consumers, industry and Government, in accordance with such policy directions as may be given by Government from time to time. We are afraid this suggestion, if implemented, will make for the continuance of many of the evils of the present policy which we are most anxious to prevent.

2. *Economic Capacity*

Shri Gupta advocates that the future policy should be to license new factories having a capacity anything from 1250 to 2000 tons on merits of each case and expansion of the existing units to the maximum extent possible depending on availability of sugarcane in their areas of operation. While recognising the economies of large-size plants, we feel that it is given an exaggerated importance by Shri Gupta. Sugarcane accounts for so large a part of the total cost of sugar that the consideration of economy resulting from a larger plant is not quite as weighty in this as in some other industries. On the other hand, having regard to the fact that sugar is an agro-industry par excellence and therefore a very important vehicle for carrying progressive influences into the countryside, the consideration of the decentralisation of this industry in order to multiply the number of growth points in the rural economy of India is so important as to justify, for the time being, the sacrifice of a smaller advantage for the sake of a much larger gain in terms of the economic development of the rural sector. We have been convinced all the more of the importance of this consideration during our tours, especially in Maharashtra, where we have seen the unfolding of a growth process we have referred to here.

S. R. SEN,
*Chairman.*
S. C. CHAUDHRI,
N. KRISHNAN,
DHARM NARAIN,
*Members.*

NEW DELHI;
*October* 21, 1965.

## *SUMMARY OF RECOMMENDATIONS*

### CHAPTER IV—*Economics of Growing Sugarcane*

1. From an analysis of available data, the broad conclusions that emerge are as follows:

(i) Maharashtra seems to possess a comparative advantage in the cultivation of sugarcane over other sugarcane producing states;

(ii) Amongst the states considered, Punjab, Rajasthan and Madhya Pradesh, on the one hand, and West Bengal, Assam and Orissa, on the other, do not, at present, appear to be well-placed for a large-scale extension of sugarcane cultivation. In this group, Punjab suffers from several handicaps, like low per acre yield of sugarcane, low sugar recovery, water-logging and frost;

(iii) Madras, Andhra Pradesh and Mysore have the advantage of higher per acre gross value of sugarcane than Uttar Pradesh and Bihar. On the other hand, the latter states possess a comparative advantage over the former when one considers farm business income or net returns from sugarcane and its competing crops. On balance of considerations, it appears that all these five states—two in the sub-tropical belt and three in the tropical belt—are more or less similarly placed so far as scope for the development of sugarcane cultivation is concerned;

(iv) Even within the regions where there is greater scope for the development of sugarcane cultivation, there are some districts which need to be given special attention for sugarcane development.

(Paragraph 3.1)

2. These broad inferences may be viewed in the light of two other considerations. These are: (i) development potential of the areas through larger application of water and fertilizer; and (ii) economic and social development of backward areas. In the sub-tropical belt, the current rate of application of water and fertilizer is grossly inadequate. The number of irrigations given and the amount of fertilizer put in per acre of land are appreciably less than those in Maharashtra and Madras. Further, it has been found by research stations located in the sub-tropical belt that, with adequate application of inputs and proper care, the yield per acre can be almost doubled in this belt. It is also possible by propagating suitable varieties to increase to some extent the level of sugar recovery in these areas. It is, therefore, very important that development programmes for sugarcane cultivation are intensified in Uttar Pradesh and Bihar. Further, the eastern region of Uttar Pradesh and the northern region of Bihar are economically backward. Sugarcane happens to be the main cash crop in these areas and being a hardy crop provides security of income to the agriculturists in the event of failure of other crops due to frequent natural hazards. Further, these areas do not enjoy the advantage of having mineral resources or other raw materials for setting up large-scale industries.

(Paragraph 3.2)

## CHAPTER V—*Gur and Khandsari*

1. While favouring appropriate measures for minimising the diversion of cane supplies away from sugar factories in the factory areas, it is emphasised that steps for the improvement and stabilisation of the gur and khandsari industry should be taken.

(Paragraph 5.1.)

2. The following measures should be taken to deal with the problem of diversion of cane in the factory areas:

(i) Re-delimitation of reserved areas so as to
  (a) make them compact, and
  (b) either exclude existing khandsari units and power-crushers completely from reserved areas; or provide adequate cane supply both for the sugar factory concerned and such khandsari units or power-crushers as already exist in the reserved areas;

(ii) Licensing of all the existing khandsari and power-crusher units and banning of new units in reserved areas of sugar factories, or within the radius of 15 to 20 kilometres of a sugar factory;

(iii) Shifting of all the existing khandsari and power-crusher units from the Intensive Development Blocks;

(iv) Imposing excise duty or some other suitable levy (if necessary on a compounded basis) on khandsari units and power-crushers (and, if possible, 'kolhus' above a certain size) upto such a level that their ability to pay a price for sugarcane higher than that fixed by Government for sugar factories is restricted; and

(v) Enforcing the existing procedure for regulating the supply of sugarcane grown in reserved areas to sugar factories through Co-operative Cane Unions, where they exist, also in the case of cane supplies to khandsari units and power-crushers. Once the cane supplies to the khandsari units and power-crushers are regulated, it would be possible to get a fair idea of the volume of their production and, if necessary, also to control their production and prices.

(Paragraph 5.2)

3. If the measures suggested above regarding certain types of control on the production of gur and khandsari are strictly adhered to, it may not be necessary to take resort to the fixation of maximum prices for gur and khandsari.

(Paragraph 5.3)

4. Sugar, gur and khandsari are eminently suitable for being dealt with from the approach of "common production programme" which has been accepted by Government for certain other industries. Since gur and khandsari will continue to be produced freely in three-fourths of the area under sugarcane and most of the restrictions mentioned above will apply primarily in the areas reserved for sugar factories, they should not be treated as detrimental to the interests of village and small-scale industries, but as instruments for balanced growth of both small-scale and large-scale industries as essential parts of a common programme.

(Paragraph 5.4)

5. Apart from a number of undesirable effects of a ban on inter-state movement of gur and khandsari, gur being an item of consumption for the low income group, it is not generally desirable to ban its movement from surplus areas.

(Paragraph 5.5)

6. The question of allowing forward trading in gur has been considered. The production and prices of gur are generally subject to wide fluctuations giving rise to hardships both for producers and consumers. Since gur has a poor keeping quality, it may be difficult to control these fluctuations through a buffer stock policy for gur. However, if the buffer stock policy for sugar which has been recommended elsewhere in the report is operated keeping in view not only sugar prices but also gur prices, it should help indirectly stabilise gur prices also. If such buffer stock operations are supplemented by the development of a well-organised and properly regulated futures market in gur under the supervision of the Forward Markets Commission, it may help to prevent undue fluctuations in gur prices.

(Paragraph 5.5)

7. Government should take measures to provide adequate and satisfactory warehousing facilities for the storage of gur, especially in those areas where gur is traded on a large scale.

(Paragraph 5.6)

8. It has been represented that the sugar factories located in the Meerut and Muzaffarnagar districts of Uttar Pradesh should be allowed to manufacture gur in their factory establishments. Such a permission will not be in accordance with the common production programme approach. The solution for the problem faced in these areas would be to undertake intensive programmes of sugarcane development so as to ensure adequate supply of sugarcane for both gur and sugar. In this context, the provisions for tubewells and proper drainage facilities in these districts deserves special attention.

(Paragraph 5.7)

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## CHAPTER VI—*Utilisation of By-products*

1. Greater attention should be paid to adequate and proper utilisation of by-products of the sugar industry. This is necessary to prevent national waste of scarce raw materials and also to improve the economy of sugar factories.

(Paragraph 5.1)

2. The following steps should be taken by Government to provide incentive to sugar factories and distilleries for proper storage and utilisation of molasses:

(i) Sugar factories and distilleries should be required, if necessary as a statutory obligation, to build steel tanks of adequate capacity for proper storage of molasses and this should be rigidly enforced. Factories producing both raw and white sugar should store separately edible and inedible molasses;

(ii) The controlled price for molasses fixed by Government is very low and does not provide enough incentive to sugar factories to undertake adequate investment on steel tanks for proper storage of molasses. The price of molasses, therefore, should be raised by at least 50 per cent. The price of edible molasses should be fixed at somewhat higher level than that of inedible molasses.

(iii) Government should assign on a long-term basis a few sugar factories to each distillery for supply of molasses, keeping in view the convenience of transport. Since it would not be economical to set up a distillery in a small sugar factory and the cost of transporting molasses would be substantially higher than that for alcohol, it would be desirable for the distilleries and sugar factories to be in close proximity to one another; the distilleries and the linked sugar factories should work out an agreed programme of storage and supply of molasses;

(iv) Sugar factories, which are not located near any distillery or paper factory and are not large enough to set up distilleries or pulp plants of their own, should explore the possibility of manufacturing cattle feed based on edible molasses, bagasse and other ingredients, both for export and the domestic market;

(v) Government should provide facilities for developing the production of and export market for potable alcohol and cattle feed based on molasses;

(vi) The export policy, both for molasses and alcohol, should be determined on a long-term basis and export procedures simplified.

(Paragraph 5.2)

## CHAPTER VII—*Research and Development*

1. Every effort should be made to ensure proper supply of the required amount of input factors and, at the same time, develop a proper extension agency for the purpose of ensuring healthy and clean cultivation. This would necessitate proper testing of soil for which soil testing laboratories should be set up and the testing done without any charge from the growers.

(Paragraph 3.1)

सत्यमेव जयते

2. Sugarcane Liaison Farms, similar to the ones existing in Andhra Pradesh, should be set up in other sugarcane growing states also.

(Paragraph 3.1)

3. The sugar factory areas in Punjab and western Uttar Pradesh suffer from lack of adequate irrigation facilities and also water-logging. High priority should be given by these states to installing a sufficient number of tubewells in the factory areas which would ensure adequate supply of irrigation water and also minimise the adverse effects of water-logging.

(Paragraph 3.2)

4. The evolution of early, mid and late varieties suitable for different regions and their propagation with the help of appropriate incentives or disincentives should be expedited.

(Paragraph 3.3)

5. In consultation with the Sugarcane Breeding Institute, Coimbatore, and the State Governments, the Government of India should draw up a list of approved varieties for different states. This list should be reviewed from

time to time. The cultivation of unapproved varieties should be discouraged by adopting control measures (*e.g.* rogueing) similar to those for cotton and also prescribing that the minimum price fixed for sugarcane would either not apply to these varieties or be subject to a sufficiently large discount of say, 20 per cent.

(Paragraph 3.3)

6. The reduction of the present size of the factory area, making it more compact, for the purpose of execution of development programme is urgently called for.

(Paragraph 3.4)

7. Pending the delimitation of the factory area, the development work should be intensified in the I.D. Blocks, and the propagation of unapproved varieties within such blocks should be statutorily banned. In the remaining part of the reserved area, the factory management should be given an opportunity to take up development work with financial assistance on a *pro-rata* basis out of the funds earmarked for that area. This would provide a healthy competition between the existing development agency and the factory management regarding development work.

(Paragraph 3.4)

8. Construction of roads and provision of adequate transport facilities should be given very high priority in the development programmes of both the states and the factories.

(Paragraph 3.4)

9. Courses for specialised training should be started at the two national institutes at Lucknow and Coimbatore. These courses should be open to employees of State Governments and sugar factories and also to growers.

(Paragraph 3.5)

10. A significant proportion of the revenue realised from purchase tax on sugarcane should be earmarked for its development work.

सत्यमेव जयते

(Paragraph 3.5)

11. Certain factories in the private sector in the tropical belt have undertaken active development programmes and thereby have reaped significant advantage in terms of efficiency, both of sugarcane cultivation and sugar manufacture. This has also helped in bringing the factory closer to the growers. Such examples should be multiplied especially by the industry in the sub-tropical belt.

(Paragraph 3.5)

12. A small Standing Committee including the Directors of the three national institutes and one representative each from Government, industry and the growers, should be constituted by the Government of India.

(Paragraph 3.6)

## CHAPTER VIII—*Perspective for* 1975-76

1. The target for annual export of sugar should be set at 7·5 lakh tonnes by 1970-71 and 10·0 lakh tonnes by the end of 1975-76. In case, the actual exports turn out to be higher or lower, the buffer stock recommended later in the report should provide some cushion and if, in the light of experience,

that is not considered adequate, there could be adjustments in the licensing policy at the time of the mid-term appraisal of the Fourth and Fifth Plans.

(Paragraph 3.5)

2. The aggregate demand for sugar, gur and khandsari in 1970-71 and 1975-76 is likely to be as follows:

(lakh tonnes)

| item | 1970-71 | 1975-76 |
|---|---|---|
| sugar for domestic consumption . . . . . . . . | 37·6 | 53·4 |
| sugar for exports . . . . . . . . . . . | 7·5 | 10·0 |
| | 45·1 | 63·4 |
| gur . . . . . . . . . . . | 69·6 | 80·0 |
| khandsari . . . . . . . . . . . | 4·5 | 5·6 |
| | 119·2 | 149·0 |

After making an allowance for chewing, seed, etc., at the usual rate (12 per cent), the targets for production of sugarcane in 1970-71 and 1975-76 will be roughly about 134 and 169 million tonnes, respectively.

(Paragraph 3.6)

## CHAPTER IX—*Price Policy for Sugar and Sugarcane*

1. The portion of the excise rebate, which has accrued to the factories on the basis of production in 1964-65 and which has not been passed on to the growers in the form of a higher cane price, should be constituted into a development fund.

(Paragraph 1.11)

2. The agency entrusted with the task of formulation of policy should be separate from that responsible for its implementation.

(Paragraph 1.13)

3. Stability is a vital need of the sugar economy. Two alternative approaches have been considered. The first one consists of the replacement of the present system of direct controls, with all their defects, by instruments of indirect stabilisation. The other consists of the continuance of the present system of controls but with improvements in those aspects where it is found most wanting. Each alternative has its own logic and requirements in terms of specific measures and for its successful operation, each set of inter-related measures needs to be treated as a package, as it were, to be implemented not piecemeal, but as a whole.

(Paragraph 1.15)

### *Alternative I: Decontrol of Sugar with a Buffer Stock Policy*

4. In view of the perishability of the cane crop and the weaker bargaining power of the sugarcane growers *vis-a-vis* the sugar manufacturers, the regulation of sugarcane price is both desirable and necessary. However, what

needs to be ensured is only a minimum and not a fixed price. Decontrol of sugar price, by enabling the cane price to vary above the prescribed minimum level, will help maintain the above parity and thus reduce fluctuations in sugar output

(Paragraph 2.2)

5. The flexibility of sugar price, though necessary to enable the sugar industry to compete with gur and khandsari for the available supply of cane, needs to be confined within certain limits. To enable the industry to pay the minimum price of cane to the growers, it is necessary to prevent sugar prices from falling below a certain level, just as to protect the interests of the consumers, they must be prevented from piercing a ceiling. And both the above objectives can be realised through a buffer stock policy in sugar. Such a policy will allow sugar prices to fluctuate within a limited range, given by the minimum and maximum prices fixed for sugar. Sugar will be acquired and stocks accumulated when sugar prices threaten to fall below the minimum and it will be sold, depleting stocks, when prices threaten to rise above the maximum.

(Paragraph 2.3)

6. Although the trends of supply of and demand for sugar have been largely in balance, there are short-period fluctuations and since these imbalances partake of a cyclical character buffer stock policy seems an eminently suitable remedy.

(Paragraph 2.4)

7. Since the demand for cane is derived from the demand for sugar, the minimum price for cane will need to be derived from the minimum price fixed for sugar. The method for doing so is dealt with in para 4.11 of section IV

(Paragraph 2.5)

8. The minimum price for sugar will depend upon (a) what may be called the 'pivot' price for sugar; and (b) the range within which it will be allowed to fluctuate around the pivot price. It is best to equate the pivot price with either a five-year or at least three-year moving average of sugar price, depending upon the extent of variability that is considered tolerable in sugar price.

(Paragraph 2.6)

9. For the next five years, the range of fluctuations to be allowed in the sugar price may be fixed at ± 8 per cent of the pivot price.

(Paragraph 2.7)

10. Initially the stocks of sugar required for a change-over to this (buffer stock) policy from the present policy of control should be of the order of 12 lakh tonnes.

(Paragraph 2.13)

11. In the past, sugar consumption has almost invariably recorded a sharp increase in the year in which sugar has been decontrolled. Since, for the successful execution of this policy it is vital that stocks should not prove to be inadequate, it is important to emphasise that, in the matter of the initial size of the buffer stocks, it is desirable to err on the side of safety rather than otherwise.

(Paragraph 2.13)

12. The magnitude of the annual stock required to be held on an average (over the period of a cycle) is likely to be significantly lower than 12 lakh tonnes and may be assumed to be of the order of 8 lakh tonnes.

(Paragraph 2.14)

13. The buffer stock should consist of two parts: one which the industry should be obliged to hold and the other which should be held by the buffer stock agency. The control over the releases of both, however, should be exercised by the buffer stock agency.

(Paragraph 2.15)

14. The industry should be subjected to the statutory obligation of carrying stocks which shall at no time be less than 20 per cent of its total production in the preceding season.

(Paragraph 2.16)

15. The buffer stock agency will undertake to buy sugar, from any factory which wishes to sell, at the floor price and sell sugar, to any wholesale dealer who wishes to purchase it, at the ceiling price.

(Paragraph 2.17)

16. When the agency is actually called upon to buy, it may, if it so desires, pay to the factory for the quantity purchased without physically lifting this quantity; it will then merely keep a record of the stocks it holds with the different factories. In view of their experience in carrying stocks and the storage facilities already available with the factories, the Commission feels that the entire buffer stock may with advantage be left in the physical custody of the factories, the agency confining itself to exercising control over its releases and meeting financial obligations pertaining to the stocks held on its account.

(Paragraph 2.17)

17. The agency will have to maintain a revolving fund for making payments out of it to the factories from whom it purchases and for receiving payments into it from the dealers to whom it sells. Since the agency will be buying when prices are low and selling when they are high, it will be making a profit out of which it will pay to the factories the storage cost of the stocks they hold on its account. This storage cost mainly consisting of the cost of godown facilities can be easily estimated and prescribed per ton of sugar per month held by the factories for the agency.

(Paragraph 2.18)

18. On the basis of a sugar output of 35 lakh tonnes, the industry's obligation to carry minimum stocks would amount to 7 lakh tonnes. Assuming an average buffer stock of 8 lakh tonnes referred to in para 2.14 of Chapter IX, the part to be held on government account would come to 1 lakh tonnes and on the basis of the initial buffer stock of 12 lakh tonnes, it would work out to 5 lakh tonnes. The adoption of this policy would involve for Government an interest liability of the order of 5 paise per kilogramme per annum for the stocks held on its account.

(Paragraph 2.19)

19. The exercise of control on releases should be strictly confined to the buffer stocks in sugar and should, on no account, extend to the remaining sugar output, which the factories should be free to market whenever and wherever they like. This is because the decontrol of sugar price when accompanied with a control on the releases of the entire output of sugar tends to run counter to the interests of the consumers and in favour of the producers. It prevents the most important advantages of the competitive

mechanism in promoting efficiency and reducing thereby the cost of production and, therefore, the price of sugar, from being reaped by the society. Finally, it retains all the defects emanating from ad-hoc-ism and suspicions of discrimination, connected with the administration of control. In applying any selective credit control, suitable relaxation should be made for the sugar industry keeping in view the seasonal character of its operations and the need for maintaining large buffer stocks.

(Paragraph 2.20)

20. In addition to the above measures, the system of rebate on excise duty on sugar should be continued, even in a period when the price and distribution of sugar are relieved of direct controls and subjected only to indirect regulation through a buffer stock policy in sugar. The present system of excise rebate for sugar, however, needs to be modified along the lines suggested in section III.

(Paragraph 2.21)

21. Government should operate the buffer stock policy through the instrumentality of the Food Corporation of India and with the advice of the Agricultural Prices Commission. Similarly, the quantities required for exports, defence personnel and distribution through fair price shops should be purchased from the sugar factories at a negotiated price by the Food Corporation of India.

(Paragraph 2.22)

*Alternative II: Control on Sugar*

22. Price control on gur and khandsari is difficult to enforce and control on the movement of these commodities is undesirable. Measures for dealing with the problem of diversion of cane supplies to gur and khandsari in the factory areas are listed in para 5.2 of Chapter V.

(Paragraph 3.1)

23. In addition to the above measures, through a rebate on excise on sugar a certain margin for manoeuvrability should be provided to the sugar factories in their competition with the gur producers.

(Paragraph 3.2)

24. The rebate to be effective for meeting the gur competition and for ensuring the crushing of surplus cane, has to be large enough. This would be possible only when there is a sufficiently high excise duty. The fact that the present excise duty on sugar is high enough for the purpose is thus a very helpful factor in the situation.

(Paragraph 3.4)

25. The excise rebate should be allowed every year on the sugar production of each factory in excess of 90 per cent of what may be called "effective production capacity".

(Paragraph 3.8)

26. Until the early and late varieties of sugarcane are propagated, it would not be in the social interest deliberately to encourage sugar production outside the normal crushing season in view of the loss of sugar it entails. Since, however, early cane varieties happen to be generally low yielders, excise rebate on early crushing would be required to enable the factories to pay a higher price for this cane to encourage early varieties. It would be in the social interest to extend the crushing period and thus economise on overhead costs by encouraging these varieties, so long as the economy exceeds the additional cane cost of these varieties. When employed for this

purpose, excise rebate will have to be a continuing feature and will need to be announced in advance, for, say, each five-year period.

(Paragraph 3.9)

27. If early cane varieties are to be promoted, the farmer and the factory have to be enabled to plan ahead, the former on the assurance that he will be compensated for the lower yield of these varieties and the latter on the assurance that it will be allowed a cushion through excise rebate to enable it to pay a higher price to the grower for these varieties. Since the promotion and popularisation of these varieties itself would take time, such an assurance of a continuing incentive becomes all the more necessary. The present differentiation between the rebate for early and late crushing encourage uneconomical crushing because of the loss of sugar it entails. If such a system is replaced by a single uniform rebate for the enitre season, the factories would not only be free, but would be under an inducement, to concentrate as far as possible their crushings in the optimum crushing period. Instead of the present basis of having separate rebates for the early, late and normal crushing seasons, there should be a uniform basis for rebate on a slab system.

(Paragraph 3.10)

28. The rebate on excise duty, applicable to the entire year's production, should be calculated on the basis of the following rate of production in excess of 90 per cent of the 'effective production capacity' as defined in para 3.8 of Chapter IX.

| | |
|---|---|
| (a) On the first 10 per cent over 90 per cent of the 'effective production capacity' | 20 per cent |
| (b) Next 10 per cent | 40 per cent |
| (c) Balance | 50 per cent |

Such portion of the rebate as may not be passed on to the grower through price or transport charges for cane should not be included in profit but should be constituted into a development fund for the factory concerned to be earmarked *inter alia* for sugarcane development work.

(Paragraph 3.11)

29. The system of sugar price fixation should not be allowed to degenerate into a 'cost plus' basis. In the existing situation, the system of fixing sugar prices on a zonal basis is favoured, but zones are to be few and so demarcated as to be broadly homogeneous from an agro-economic point of view.

(Paragraph 3.12)

30. In the interest of stabilising the sugar availability for the consumer, providing stability to the industry and the grower, and rendering the working of controls smooth and effective, a stock policy in sugar becomes a necessary accompaniment of a sugar control policy.

(Paragraph 3.13)

31. In years of short cane crop, the Commission would emphasise the desirability of considerably stepping up the releases of sugar at the time of Dussehra or Diwali, whichever happens in the year concerned, to be nearer the time when *kolhus* are set up for gur manufacture, so as to discourage the setting up of *kolhus* in the factory areas. Alternatively, the farmers who supply cane to the factory, especially in areas where gur competition is acute, should be entitled to the same quantity of sugar as is allowed to people in urban areas. To be effective in their purpose, it is important that these measures be accompanied with adequate publicity.

(Paragraph 3.15)

32. In order to minimise the cost of transport of sugar, the time taken by its movement and the load on the railway system, it is necessary to reduce the cross-haulage of sugar to the minimum.

(Paragraph 3.16)

33. The machinery for the distribution of sugar in a period of control should be, as far as practicable, the same as exists for the handling and distribution of foodgrains. During the period of control on sugar, the system of retail distribution of sugar should be on the basis of identity cards and the distribution of a certain quantity of sugar through fair price shops should continue when control is lifted from sugar.

(Paragraph 3.17)

34. There is no need for the establishment of a Sugar Marketing Organisation.

(Paragraph 3.19)

35. The releases and movement of sugar should be managed by the Food Corporation of India. The export policy should continue to be decided by Government as at present but the implementation of export policy should be handed over to the State Trading Corporation of India. The Agricultural Prices Commission should be entrusted with the task of: (a) fixing the sugar price and minimum sugarcane price, (b) reviewing the composition of zones for fixation of such prices, and (c) advising on stock policy.

(Paragraph 3.20)

*Regulation of Sugarcane Price*

36. The present system of regulation of cane price, under conditions of a free market in sugar, is inequitous for the sugar industry in different regions. If a free market in sugar is to be achieved and long-term efficiency in sugarcane cultivation is to be promoted, the present system of regulation of cane price needs to be reformed.

(Paragraph 4.7)

37. If premia could be cast on the principle of proportionality and supplemented with like discounts or, in the alternative, the specified level of recovery could be lowered sufficiently so as to approximate the lowest regional level of recovery observed in the country, the regional differences in the cane cost of sugar could be so largely narrowed down as to make the minimum cane price regulation consistent with an ex-factory price of sugar uniform throughout the country. With the exception of the incidence of short duration, the differences in the cost of manufacturing sugar would then reflect not so much the regional differences caused by natural factors as the relative efficiency of the sugar factories. As for the very short duration of crushing season in certain parts of the country, the remedy lies in the shifting of these factories to more favourable areas within the state concerned or alternatively in a vigorous drive for the development of sugarcane cultivation in these areas.

(Paragraph 4.8)

38. The reason which prompts the pitching of the specified level of recovery high is the same which keeps the premia at a less than proportionate level and indeed allows for no discounts at all; it is to enable the sugar factories to pay a higher cane price in regions where gur competition is acute without allowing a corresponding increase in cane price in other regions, so as to moderate the overall increase in sugar price. The reason flows from the desire to use minimum cane price regulation for

purposes other than those for which it is intended, namely to afford protection to the growers and to induce efficiency. The measures which will enable the factories to withstand gur competition and receive an adequate flow of cane supplies have been suggested elsewhere. Therefore, premia should be cast on a proportionate basis. In view of the difficulties involved in introducing a system of discount as also in drastic lowering of the specified level of recovery in the immediate future, the latter should be brought down to 9·4 per cent in 1965-66, if possible, and 9·0 per cent in 1966-67, in any case. The detachment of minimum cane price regulation from extraneous ends will go a long way in removing that ad-hoc-ism which so much characterises the present policy and gives rise to suspicion and inter-regional tension.

(Paragraph 4.9)

39. The principles that ought to guide the determination of the level of minimum price of sugarcane would be different according to whether the cane price is to be determined in the context of a free market in sugar subject to regulation through a buffer stock policy or in the context of a control on sugar prices.

(Paragraph 4.10)

40. In the former case, the minimum price for cane would be derived from the minimum price fixed for sugar. The minimum price for cane per quintal should be a certain (appropriate) percentage (as in several other sugar-producing countries) of the net realisation from sugar (valued at its minimum price) obtained from one quintal of sugarcane. Once this percentage is determined, the minimum price for sugarcane will vary according as the minimum price for sugar varies over time.

(Paragraph 4.11)

41. The principal implication of such an arrangement is that it involves deferred payment. Despite the fact that in India a sugar factory is fed by a very large number of small growers, the existence of cane co-operative unions, makes the above arrangement a feasible proposition. Arrangements should be made to ensure that the deferred payment is made not later than 3 months from the close of the season, the minimum price being paid at the time of the delivery of the cane by the growers. In this connection, it would also underline the desirability of paying to the cane grower on the basis of the sucrose content of the cane delivered by him rather than the recovery of sugar therefrom, for the latter depends not only upon the former but also the efficiency of the sugar manufacturer. Besides, a system of payment based not on the sucrose content of a grower's cane but on the average recovery of sugar from cane supplied by all the growers to a factory seriously undermines the incentive it is intended to provide to the cane grower for taking to the cultivation of high sucrose content varieties of cane. A system of incentive to be effective ought to be based not on an average but on the quality of cane supplied by each individual grower. The National Sugar Institute has evolved a method in this regard which can be introduced without any difficulty. This method of payment should be implemented from the 1966-67 season, and necessary measures, including enactment of a statute, should be initiated immediately.

(Paragraph 4.12)

42. Under a system of control on sugar prices, the minimum price for cane has already to be known before the controlled price for sugar can be determined. Unlike a system of free market in sugar, it cannot be derived from the sugar price. In this case, in principle, the minimum

price of cane should be so fixed as to cover the bulk-line opportunity cost of cane cultivation, the bulk-line referring to that around which the opportunity cost of the largest number of cane growing regions lies. Once so determined, the minimum price of cane should be adjusted from year to year on the basis of an index of the prices of competing crops so as to preserve the parity between the price of sugarcane, on the one hand, and the prices of competing crops, on the other. The objective underlying this principle of price fixation for sugarcane is to prevent a net diversion of area, especially from foodgrain crops, to sugarcane. Since, with improvements in cane cultivation and the consequent reduction in its cost of production (per tonne), such an adjustment will not preserve the parity between the net profitability of sugarcane and that of competing crops, it will be necessary to conduct a cost inquiry for determining this parity and thence the base price (minimum) of sugarcane, periodically, say, on a five year basis.

(Paragraph 4.13)

43. The alternative of fixing the minimum cane price with reference to the opportunity cost of regions, where this cost is the highest, is not desirable, for it contains a built-in stimulus for the overall expansion of cane acreage in the country. The task of fixing the minimum price of cane from time to time is best entrusted to the Agricultural Prices Commission.

(Paragraph 4.14)

44. If the level of recovery for which the basic minimum price of cane is fixed is too high, as it presently is at 10·4 per cent, it destroys the incentive on the part of the growers to take to sugarcane varieties with a higher sucrose content, in regions whose recovery falls short of this level by a wide margin.

(Paragraph 4.15)

45. Irrespective of the difficulties involved in a drastic lowering of the specified level of recovery (or in the alternative, of introducing a system of discounts) in the immediate future, the specified level of recovery should be brought down to 9·4 per cent in 1965-66, if possible, and 9·0 per cent in 1966-67 in any case.

(Paragraph 4.16)

46. Having regard to the prospects for the sugarcane crop in the coming year, *i.e.* 1965-66, the minimum price of sugarcane which was initially announced for the year 1964-65, is adequate for 1965-66 considering the returns for competing foodgrain crops. There is a strong case for fixing the minimum price of sugarcane for 1965-66 at Rs. 4·96 per quintal (Rs. 1·85 per md.) for 9·4 per cent recovery, subject to an increase of 4·0 paise per quintal (1·5 paise per md.) for every 0·1 point increase in recovery above this level, especially for preventing diversion of land and other inputs from foodgrains to sugarcane in the present emergency. If that is found difficult, the principle of proportionality in fixing the premium should be followed in any case from 1966-67 when the minimum price of sugarcane should be fixed at Rs. 4·82 per quintal (Rs. 1·80 per md.) for 9·0 per cent recovery subject to an increase of 5·36 paise per quintal (2 paise per md.) for every 0·1 point increase in recovery above this level. The announcement of the minimum price for 1966-67 should be made by December 1965, *i.e.* well in advance of the commencement of sowings.

(Paragraph 4.17)

47. The price of Rs. 4·96 per quintal (Rs. 1·85 per md.) for 9·4 per cent recovery for 1965-66 is for cane delivered at the factory gate

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and is, therefore, subject to a deduction for cost incurred by the factory in transporting such cane as is not delivered at the factory gate. The minimum price of sugarcane should not be fixed on an *ex*-field basis because it implies the inclusion of the entire cost of transporting cane from the field to the factory in the sugar price. In order to avoid loss through driage, it is important to discourage long haulage of cane and this requires that the minimum cane price be fixed not on an *ex*-field but on an *ex*-gate basis, subject to a certain, but not excessive, deduction from the cane price for the cost incurred for transporting cane by the factory. At present, a deduction upto 32 paise per quintal is allowed from the minimum price for sugarcane delivered at the cane purchasing centre connected by rail, and a deduction of 2·5 paise per quintal per kilometre, subject to a maximum of 32 paise, in the case of sugarcane delivered at cane purchasing centres connected by road, if such cane is transported by the sugar factory at its own cost. No distinction need be drawn between the cost incurred by a factory in transporting cane from an outside purchasing centre and that incurred in transporting it from the farmer's field.

(Paragraph 4.18)

48. In view of the urgent need for discouraging the cultivation of disease-ridden or otherwise unsuitable varieties of sugarcane, the minimum price fixed for cane should be applicable to only the approved varieties (announced for each region from time to time). or, in the alternative, it should be subject to a discount of 20 per cent for non-approved varieties.

(Paragraph 4.19)

49. In view of the present emergency and the fact that the requisite stock of sugar has yet to be built up, the control on the lines of Alternative II should be continued during 1965-66. Every effort, however, needs to be made to augment the present stock so as to reach a size of 12 lakh tonnes by October, 1966. This target is well within reach if care is taken to maximise sugar production and necessary caution is exercised in respect of its releases. If stock of about 12 lakh tonnes (including the carry-over from 1964-65) is built up by October, 1966, Alternative I may be adopted from the beginning of the 1966-67 season. If on indications at the close of the current season, the year 1966-67 promises to be good in regard to the prospects for sugar production, even a shortfall of about a lakh tonne or so in stocks should not deter Government from launching the policy of decontrol of sugar.

(Paragraph 5.1)

50. During a period of control on sugar, a rebate on excise duty is designed to serve, as a solution of the problem not only of surplus cane in a bumper year but also of that of diversion of cane in the years of short crop, without recourse to *ad hoc* increases in the prices of sugarcane and sugar which make for a drift in the direction of 'cost-plus' basis of price fixation. It is designed also to promote the cultivation of early varieties of sugarcane which are low yielders and the popularisation of which would take time and, therefore, require the assurance of a continuing incentive. During a period of free market in sugar, the excise rebate is required not only for the promotion of early cane varieties but also for reducing the inequitous effect of the present system of cane price regulation on the sugar industry in different regions. The sugar industry in regions where recovery is low has to be provided relief, so long as the

system of cane price regulation is not reformed. Even when it is reformed, some relief would be needed for the industry in regions where it may not get adequate cane supplies without offering a higher price. Since, in the interest especially of the growers, the existing factories in most of the unfavourable areas may have to continue, they would require some relief in the short run and an inducement to take to cane development work in the long run. The excise rebate serves both the purposes. In a period of decontrol, excise rebate has thus three objectives:

(a) to remove inequity inherent in the present system of cane price regulation;

(b) to promote cane development, whether through the propagation of early and late varieties by compensating for lower yield and recovery or in other ways, so as to increase the economic viability of the existing industry in 'problem areas' as well as promote efficiency generally; and

(c) to create an inducement for a full, or even an overfull, utilisation of capacity in the industry thus making for a progressive increase in sugar production.

The rebate as contemplated should not involve any burden on the exchequer, as it would be more than covered by the excise collected on the additional output which would not be produced but for the rebate.

(Paragraph 5.2)

51. The desirability of encouraging the production and consumption of off-colour (raw) sugar in preference to that of white sugar should be emphasised. The production of off-colour sugar by helping economise on the consumption of sulphur will save foreign exchange. It can help augment the production of sugar in the country without additional resources in the sense that a given installed capacity of the industry can produce more off-colour than white sugar. Unlike in the case of white sugar, the molasses produced as a by-product of off-colour sugar are edible and constitute a valuable cattle feed. The fact that the present market for molasses for the manufacture of industrial alcohol faces the prospect of being captured by naptha-based alcohol in the future, makes it important to plan ahead for an alternative utilisation for molasses, *e.g.*, as cattle feed. And this requires that the production of off-colour sugar should be encouraged so that the molasses produced are edible. The double-cured raw sugar of 99·4 pol (*i.e.*, off-colour sugar) has a fairly good keeping quality and does not, in respect of taste, compare unfavourably with white sugar. In view, however, of consumers' preference for white sugar, the consumption of off-colour sugar will have to be encouraged through necessary publicity and an adequate price differential between the two types of sugar. This can be achieved by having different rates of excise duty on white and off-colour (or raw) sugar and keeping the rate on the former sufficiently higher (say, by 25 paise per kilogramme) than that on the latter.

(Paragraph 5.4)

52. The sulphitation factories should be required to produce a certain appropriate proportion of their sugar output in the form of raw sugar.
(Paragraph 5.4)

## CHAPTER X—*Cost Schedules*

1. The following five zones are recommended for the purpose of fixation of ex-factory prices of sugar:

Zone I: Gujarat, Maharashtra, North Mysore, and North Andhra Pradesh;

Zone II: Orissa, rest of Andhra Pradesh, South Mysore, Madras, Pondicherry and Kerala;

Zone III: Meerut, Muzaffarnagar and Bulandshahr districts of West Uttar Pradesh, Punjab, Rajasthan and Madhya Pradesh;

Zone IV: Central and rest of West Uttar Pradesh; and

Zone V: East Uttar Pradesh, Bihar and West Bengal.

Assam may be treated as a zone by itself on account of its location.
(Paragraph 4.7)

2. When the potentialities of sugarcane development from agro-climatic point of view are appropriately exploited in future through research and development works like irrigation, drainage, it should be possible to reclassify the sugar producing areas in the country into five regions as suggested by the Sugarcane Breeding Institute, Coimbatore. Till then, the zones recommended in para 4.7 may be adopted for price fixation.
(Paragraph 4.8)

3. Although an increase of 50 per cent in the price of molasses has been recommended, credit has been taken only at current rates in the fixation of ex-factory price; the margin left should be utlised for providing proper storage facilities for molasses.
(Paragraph 6.5)

4. The purchase tax in Mysore is out of line with that in the neighbouring states. It is desirable that the purchase tax in different states should be more or less uniform.
(Paragraph 7.2)

5. Even where there are no outstation purchase-centres, no distinction should be made between purchases of cane from outstation-centres and those from the fields of the farmers for purposes of income-tax.
(Paragraph 7.5)

6. As the actual incidence of emergency risk insurance is not known, no provision has been made for this in the schedules. Suitable adjustment has to be made for this before notifying the prices.
(Paragraph 9.1)

7. In addition to what has been provided in the schedules, a contingency allowance of 50 paise per quintal of sugar may be added to the ex-factory prices uniformly for both white and raw sugar in all the zones.
(Paragraph 10.1)

8. The cost schedules prepared by the Commission should be in force for a period of five years ending October, 1970 subject to adjustments, whenever called for, for variations consequent upon governmental action.
(Paragraph 11.3)

9. No separate schedule has been prepared for Assam as there is only one factory in that state. The ex-factory price for Assam should be fixed on the basis of the price fixed for Zone V *plus* the average cost of transport from a suitable railway point in north Bihar to the factory site in Assam. (Paragraph 14.1)

10. The schedules of manufacturing cost (including extra cost on cane), packing, etc., per quintal of sugar for the five zones, based on 10 per cent recovery, for different durations are given in Tables X. 4A—E. (Paragraph 14.2)

11. There is no need for separate prices for factories working on carbonation process. (Paragraph 15.2)

12. No premium is recommended for A & B grades of sugar. (Paragraph 15.4)

13. The rate of return of 12 per cent is not unreasonable and should encourage expansion of the industry. (Paragraph 16.1)

14. There is no justification for providing the full difference between the replacement cost and the historical value of the assets without taking into account the return earned from the use of the depreciation fund, the development rebate earned by the industry and also the improvement in design, etc., resulting from technological development reflected in the assets at the time of replacement. (Paragraph 19.2)

15. Any provision for rehabilitation added to a uniform price applicable to all units in the industry may not give adequate relief to those units which are in need of rehabilitation while those not in need of it would get undue benefit. (Paragraph 19.3)

16. The provision of depreciation on the basis of the standard block or the cost of a new plant would result in unwarranted discrimination and unjustifiable concession, in varying degrees, as between different units in the industry. (Paragraph 19.5)

17. The industry's contention that under the present system of determining prices on the principle of average for a zone, there is no incentive for heavy investment in block, does not seem to be well-founded. (Paragraph 19.7)

18. What the industry ought to be concerned with is the ultimate ex-factory price. To take out of context one element of cost that goes into the total cost and then to plead that because the incidence in respect of that element of cost is low in the case of old plants some allowance should be given to the industry as a whole, is not justified. (Paragraph 19.7)

19. An appropriate way of giving assistance to old units for rehabilitation and modernisation would be to arrange for them loans, where necessary, at market rate of interest and extend to them the development rebate on the investment on the authorised programme for rehabilitation, modernisation and expansion on the same basis as for new units. (Paragraph 19.8)

20. Government may consider providing finance for rehabilitation through the existing financial institutions like the Industrial Development

Bank and the Industrial Finance Corporation, etc. There is no need for creating a special financial institution for the sugar industry. Additional funds to the extent necessary may be provided through the existing financial institutions. Advances through these institutions to the industry should be given at the normal rates of interest. Financial institutions may also extend concessions like deferred payment of interest and principal.

(Paragraph 19.10)

21. Loans should not be given to all the units as a matter of course. The application of each unit should be carefully examined from the technical as well as the economic point of view. Priority should be given to the expansion of such units as are below the economic capacity of 1250 tonnes. Where the cost of rehabilitation and modernisation is very high relative to the cost of a new plant, the desirability of replacing the old plant by a new plant should be examined.

(Paragraph 19.11)

22. If for any reason a particular factory which ought to be rehabilitated in order to survive as an economic unit in the industry, fails to take advantage of these facilities, within a reasonable time, Government should consider taking it over or running it as a joint venture in the social interest, especially of the growers, and rehabilitate, modernise and, if necessary, expand it.

(Paragraph 19.12)

## CHAPTER XI—*Export Policy*

1. Exports of sugar should not only be continued but also augmented and efforts should be made to obtain as large a quota as possible under all the three agreements.

(Paragraph 3.1)

2. The need for reducing the cost of production of sugar in India, in order to improve her competitive position in the world market, is urgent. In the first place, cane price being the largest constituent of the cost of manufacture of sugar, it will be necessary to reduce gradually the current minimum price of sugarcane. This will be possible if adequate steps are taken to increase appreciably the per acre yield of sugarcane so that the grower does not suffer any reduction in the total returns from sugarcane cultivation. Second, any reduction in the cost of manufacture of sugar would necessitate an all-round improvement in the efficiency of the sugar factories. In this context, it has been suggested that big factories should be set up in order to reduce the cost of manufacture. An increase in the size of a factory brings about only a small reduction in the cost of manufacture. Further, this reduction in the manufacturing cost is offset to a large extent under existing conditions in India by various disadvantages, such as, higher transport cost and greater driage of cane. Since it involves a number of considerations including the question of proper utilisation of by-products, such as, bagasse and molasses, this matter should be examined carefully before Government takes any decision to set up large-size factories.

(Paragraph 3.2)

3. Currently, the entire export loss is being met by the Government of India out of the revenue proceeds of the excise duty on sugar. While during the period of control, the incidence of this burden is passed on to the consumer in the form of higher domestic price, during decontrol, the

incidence will be shared by the producer and the consumer in a proportion depending upon the relative elasticities of supply of and demand for sugar. There seems to be no justification for a special levy on the sugar manufacturer so long as this levy can be passed on to the consumer. In a period of control, since the rate of return, which is considered fair, is allowed by Government for the purpose of price fixation, it will not be appropriate to make the industry pay for the export losses out of this return. The Government of India and the State Governments should bear the entire loss on export of sugar. The current rate of excise duty may be raised for the purpose if it is considered necessary. If, however, it is felt that on account of social or international considerations, the manufacturers should be made to share a part of the export loss, an appropriate way of distributing it among the sugar factories would be on a basis, *pro-rata* to the 'effective production capacity' as defined elsewhere in the report. There will be relatively less scope for the manufacturers to shift the burden on to the consumers if the levy is based on capacity rather than actual output.

(Paragraph 3.3)

4. The State Governments levy cane cess/purchase tax on sugarcane crushed by sugar factories. The State Governments can share the burden of export loss by forgoing a certain proportion of this revenue. A formula for an equitable sharing of export loss by the sugar producing states has been suggested.

(Paragraph 3.4)

5. It would be desirable to assign the task of handling exports to an independent agency. It is, however, not necessary to set up a new sugar marketing organisation for this purpose alone. The State Trading Corporation (STC), which is already acting as an export agency of Government for various other commodities, should be considered an appropriate agency for the export of sugar also.

(Paragraph 3.6)

6. The question of economy in the cost of manufacture of raw sugar has been examined by the Commission and it appears that the cost of manufacture of raw sugar is significantly lower than that of white sugar. Separate cost schedules for raw sugar, constructed by the Commission may be followed for the determination of ex-factory prices for raw sugar for different zones and different pols.

(Paragraph 3.7)

7. Till such time as sufficient distillery capacity is created in order to utilise the entire production of non-edible molasses, Government should liberalise the export policy for molasses. Unless a sustained and regular market is created for Indian molasses, it may be difficult to increase the export of this commodity in future when the production of molasses would be more than what could be utilised by the indigenous distilleries. Some procedure should be devised whereby such sugar factory delivering one tonne of molasses to a distillery may be given an export permit of, say, half a tonne without delay. Some of the alcohol-based industries, such as, polythene, synthetics, etc., may use in future alcohol made from naptha instead of molasses as their basic raw material. It would, therefore, be necessary to plan ahead for a proper utilisation of alcohol manufactured from molasses. It appears that there is a good demand for potable alcohol in the foreign markets. It should not be difficult for the distilleries to change over from the production of industrial alcohol to potable alcohol. In order that an export market for potable alcohol is properly developed.

Government should liberalise the export policy for alcohol. It should also fix a minimum quota for exports, so that the foreign buyer can plan ahead on the basis of an assured supply from India. The liberalisation of export policy for both molasses and alcohol would earn for the country a substantial amount of foreign exchange without calling for subsidisation of the export of these commodities on any significant scale.

(Paragraph 3.8)

## CHAPTER XII—*Licensing Policy*

1. At the end of 1970-71 and 1975-76, the requirements of sugar for internal consumption work out to 37·6 and 53·4 lakh tonnes respectively. If the export demands of 7·5 lakh tonnes and 10 lakh tonnes during the Fourth and the Fifth Plan periods are added to the above estimates, the total demand for sugar works out to 45·1 and 63·4 lakh tonnes at the end of 1970-71 and 1975-76 respectively.

(Paragraph 4.1)

2. The additional capacities that may have to be installed during the Fourth and Fifth Plan periods work to about 12·5 lakh tonnes (1,04,000 tonnes of cane crushing capacity per day) and 18 lakh tonnes (1,50,000 tonnes of cane crushing capacity per day) respectively. In view of the usual lag between licensing and establishment of capacity, licensing may have to be suitably higher than this figure.

(Paragraph 4.1)

3. For the present, the minimum economic size of a factory should be fixed at 1250 tonnes per day, with provision for expansion upto 2000 tonnes. The question of determination of economic size of a sugar factory may be reviewed at intervals of, say, 5 years in the light of further developments in sugar technology.

(Paragraph 4.2)

4. The various merits and disadvantages of having a large-size factory have been considered. The economies of scale, which result from having larger units and captive by-product plants, are well-known. These will, however, have to be weighed against certain disadvantages peculiar to an industry which depends on a raw material that is perishable and is produced by a large number of small farmers. A large-size factory of 2000 tonnes or more would require an area of nearly 20 thousand acres to feed it in the sub-tropical belt. Unless such an area consists of big plantations or is distributed over a small number of large-size farms, the above economies may be offset to some extent, by increase in cost of transport of cane from long distances and greater driage of cane leading to loss in recovery. In addition, sugarcane cultivation in small holdings scattered widely would render intensive development work by the factories difficult.

(Paragraph 4.3)

5. As regards big factories of 4000—5000 tonnes capacity for purposes of export, these will prove economic only if they are based on large plantations.

(Paragraph 4.4)

6. The modernisation of agriculture and development of rural areas call for the promotion of agro-industries of which sugar is one of the most important. If a large number of factories of the minimum economic size is set up, it should help the dispersal of the industry and provide a larger number of "growth points" over a wider area. This would also help promote a more rational location pattern for the sugar industry

reducing, in particular, the cost of transport of sugar. However, the need for the expansion of some of the existing units also cannot be overlooked.

(Paragraph 4.5)

7. Against the target of additional capacity of 30·5 lakh tonnes (or 254 thousand tonnes of cane crushing capacity per day) to be installed during the next ten-year period (1965-66—1975-76), about 25·6 lakh tonnes (or 214 thousand tonnes of cane crushing capacity per day) would be required, half for the creation of new units and half for the expansion of existing units. The decision about the balance of 4:9 lakh tonnes (or 40 thousand tonnes of cane crushing capacity per day) may be taken only towards the end of the Fourth Plan period in the light of export prospects and the recommendations of the Committee which has been appointed by Government to look into the question of establishmnt of large-size factories for export.

(Paragraph 4.6)

8. Out of the capacity to be set aside for the expansion of existing units, first priority should be given to the expansion of uneconomic units having installed capacity of less than 1250 tonnes per day.

(Paragraph 4.7)

9. The uneconomic units, located in unfavourable area, may be asked either to merge so as to operate more efficiently or to shift to areas better suited to sugarcane cultivation preferably within the same state. In case neither of the above is feasible, the State Governments should take up urgently special measures for the improvement of cane cultivation in the reserved areas of these factories. In the light of improvements made, suitable expansion in the capacity of these units may be considered some time later.

(Paragraph 4.7)

10. Regarding the need for expansion of those units whose capacity is above 1250 tonnes each, the Commission recommends that: (a) factories, which can establish that, with small expansion, not exceeding 300/400 tonnes, they would become significantly more balanced and economic than now, should be allowed such expansion; (b) factories asking for further substantial expansion upto 2000 tonnes should be permitted such expansion if it is established that they have taken requisite steps to improve the yield per acre of sugarcane from their existing reserved area; (c) factories above 2000 tonnes should not normally be permitted to expand unless these units fulfil the condition mentioned in (b) above and also satisfy the authority concerned that (i) they would set up by-product industries like alcohol and pulp, and (ii) a substantial part of their sugar production would be supplied for export.

(Paragraph 4.8)

11. The additional capacity of 3·5 lakh tonnes to be created during the Fourth Plan period should be distributed over (i) new units and (ii) the expansion of existing uneconomic units to enable them to expand to a capacity upto 1250 tonnes; it is expected this would absorb practically the whole of it. However, if any balance is left, it may be issued against the genuine demands for small expansion, of, say, 300/400 tonnes for those factories which, with such an expansion, would become more balanced and viable. The question of issue of licences for substantial expansion of factories above 1250 tonnes may be considered against the additional capacity to be created during the Fifth Plan period.

(Paragraph 4.9)

12. Proper technical examination of each application for expansion of existing capacity should be undertaken before expansion is granted by Government. For this purpose, the feasibility of setting up a well-equipped cell for consultancy service in the National Sugar Institute should be explored.

(Paragraph 4.10)

13. In view of the fact that there is a large scope for increasing the yield per acre of sugarcane from its present level by suitable provision of irrigation, drainage and fertilizer and also the fact that the current minimum price fixed for sugarcane is highly attractive to the cultivator and gives him higher returns than those from cultivation of foodgrains, it would be necessary to restrict, as far as feasible, any expansion of area under sugarcane cultivation. This has become particularly important in view of the present emergency which requires that there should be no net diversion of area from foodgrains. The Commission, therefore, recommends that Government should fix a compact area for each factory based on the present licensed capacity and should not allow any expansion of this area in future especially in regions where there is a substantial scope for improvement in yield per acre. If measures are taken to improve the yield per acre of sugarcane from this fixed area, and thereby a larger supply of sugarcane is assured, the factory may, in due course, be allowed suitable expansion in its capacity.

(Paragraph 4.11)

14. Well defined criteria should be laid down and adhered to rigidly by Government when deciding upon the location of new sugar factories. These criteria should be: (a) agro-climatic considerations, (b) comparative economic advantage of growing sugarcane *vis-a-vis* competing crops, and (c) consideration of freight advantage from a surplus sugar producing area to the area in which it is proposed to set up a new factory.

(Paragraph 4.12)

15. On the basis of the criteria (a) and (b), Punjab, Jammu and Kashmir, Rajasthan, north Madhya Pradesh, coastal Orissa, West Bengal and Assam do not appear to be favourably placed, under present conditions, for the expansion of the sugar industry. Location of a new factory in these areas may, however, be considered if the higher cost of manufacture of sugar in these areas is counter-balanced by the cost of transporting sugar from a neighbouring surplus sugar producing area.

(Paragraph 4.12)

16. So far as the scrutiny of applications for setting up new factories is concerned, Government should determine the total number of new factories that should be set up during a particular period, of, say, five years and invite applications from all the states. The decision should be based on a comprehensive examination of all these applications in the light of the criteria mentioned in previous paragraph.

(Paragraph 4.13)

17. Regions A, B and C should be generally preferred for the location of new units during the next five years or so. Within these regions again certain districts enjoy greater advantages over others and, in deciding about the location of new units, these differences may be kept in view. Further, the eastern districts of Uttar Pradesh and the northern districts of Bihar are economically backward and have no mineral resources or other important raw materials on the basis of which major industries could

be set up. From consideration of balanced regional development, these areas may be given a somewhat higher priority than they would otherwise deserve. The Commission recommends that, for the next five years, no new units should be allowed in those areas where competition from gur and khandsari manufacture is currently acute and where agricultural conditions, at present, are not favourable for substantial increase of sugarcane production. In such of these areas as are considered suitable for sugar industry, necessary corrective action (*e.g.* irrigation, drainage, varietal improvements, etc.) may be undertaken during the next five years and the question of setting up new factories in these areas reviewed on the basis of changed agricultural as well as economic conditions after that period.

(Paragraph 4.14)

18. The Commission found that the setting up of a sugar factory had helped significantly in the economic and social betterment of the area around it. The setting up of a co-operative sugar factory has, thus, acted as a nucleus for social and economic development of the area around it and has helped to develop a new class of rural entrepreneurs. However, cooperative sugar factories in states other than Maharashtra have not shown similar satisfactory results. The Commission would like to impress upon co-operative sugar factories located in other parts of the country to study closely and emulate developments in Maharashtra.

(Paragraph 4.15)

19. While the Commission generally agrees with the Government's policy that new units should be confined to the co-operative sector, it feels that where it is difficult to set up a co-operative factory, the State Government concerned may set up factories either under its own aegis or in collaboration with the joint-stock sector. In the latter case, the State Government may usefully hold the majority share capital so as to have a predominant voice in the management of such a joint venture. The Commission would further recommend that such a joint venture should be given sufficient autonomy in day-to-day management and operations. It also recommends that those sugar factories, joint-stock as well as co-operative, which are found to be badly managed for more than three years, should be taken over and run by Government for a certain number of years and then handed back to the owners subject to certain conditions regarding sound management practices being followed. The Industries (Development and Regulation) Act, 1951, should be suitably amended with a view to facilitating this. Government should also maintain a nucleus technical organisation for this purpose. Since sugarcane is a perishable crop and the fate of a large number of farmers is dependent upon it, Government cannot afford to permit any sugar factory to be mismanaged.

(Paragraph 4.16)

20. The Commission has noted that some joint-stock units have recently sought to bring into their fold farmers as share-holders in order to achieve a better identification of interest between the factory and the farmer. It feels that this is a commendable step worthy of emulation by others, but, in order to be really useful, it should be done on a substantial rather than on a token scale.

(Paragraph 4.17)

21. A Standing Expert Committee including the Director of the Sugarcane Breeding Institute, Coimbatore, the Director of the National Sugarcane Institute, Lucknow, the Director of the National Sugar Institute,

Kanpur, a representative each of the Department of Food, Ministry of Industry, Planning Commission, Agricultural Prices Commission and two independent experts—one an economist and another a technologist—should be set up to examine the applications for licences for expansion of existing factories and setting up of new factories and advising on their location and site in the light of the technical examinations envisaged in para 4.10 and the criteria for licensing mentioned in para 4.12.

(Paragraph 4.18)

## CHAPTER XIV—*Conclusion*

1. The real remedy of the problem facing the sugar industry should, therefore, tackle the basic causes, natural as well as man-made. The natural causes may take a somewhat longer time to be remedied. The man-made causes can be corrected more quickly, but, since these causes have fairly deep roots, it may be difficult to correct them unless a comprehensive policy based on well-defined principles, is formulated and implemented firmly, and short-term or sectional considerations and concomitant 'ad-hoc-ism' in policy are definitely eschewed

(Paragraph 4)

2. The long-term recommendations of the Commission have been presented as a self-contained package, as it were. The various components of this package have no doubt their own individual merits and demerits looked at from sectional points of view. But, taken together, they make a balanced whole, individual components supplementing one another. The package should, therefore, be considered in its entirety and not piece-meal.

(Paragraph 6)

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# APPENDICES

## APPENDIX I

## MINISTRY OF FOOD & AGRICULTURE

## (DEPARTMENT OF FOOD)

## NOTIFICATION

*New Delhi, the 3rd August, 1964*

*S.O. 2670.*—Whereas the Central Government is of opinion that it is necessary to appoint a Commission of Inquiry for the purpose of making an inquiry into certain matters connected with sugar and sugar industry;

Now, therefore, in exercise of the powers conferred by Section 3 of the Commissions of Inquiry Act, 1952 (60 of 1952), the Central Government hereby appoints a Commission of Inquiry consisting of—

*Chairman*

1. Dr. S. R. Sen, Adviser (Programme Administration), Planning Commission, New Delhi.

*Members*

2. Shri S. C. Chaudhri, Economic and Statistical Adviser, Ministry of Food and Agriculture, New Delhi.
3. Shri N. Krishnan, Chief Cost Accounts Officer, Ministry of Finance, New Delhi.
4. Shri S. C. Gupta, Director, National Sugar Institute, Kanpur.
5. Dr. Dharm Narain, Institute of Economic Growth, University Enclave, Delhi.

*Secretary*

6. Dr. P. K. Mukherji, Deputy Economic and Statistical Adviser, Directorate of Economics and Statistics, Ministry of Food and Agriculture, New Delhi.

2. The said Commission shall make an enquiry into—

(*a*) the determination of the price, and the system of distribution of sugar.

(*b*) the policy regarding licensing of new sugar factories and the expansion of existing sugar factories.

3. The said Commission shall submit an interim report regarding the determination of the price of sugar by the end of August, 1964.

(No. F.24-1/64-Sugar).

K.L. PASRICHA,

Jt. Secy.

सत्यमेव जयते

## APPENDIX I-A

## MINISTRY OF FOOD AND AGRICULTURE

## (DEPARTMENT OF FOOD)

### NOTIFICATION

*New Delhi, the 4th September, 1964.*

*S.O. 3225.*—In exercise of the powers conferred by Section 3 of the Commissions of Inquiry Act, 1952 (60 of 1952), the Central Government hereby makes the following amendment in the notification of the Government of India, in the Ministry of Food and Agriculture (Department of Food) No. S.O. 2670, dated the 3rd August, 1964, namely:—

In paragraph 3 of the said notification for the words and figures "by the end of August, 1964" the words, letters and figures "by the 10th September, 1964" shall be substituted.

(No. 24-1/64-Sugar).

K. L. PASRICHA,
Jt. Secy.

सत्यमेव जयते

## APPENDIX II

*Representatives of State Governments, Union Territories, Departments of Government of India, Associations, Expert Committees and Commissions and others invited by the Commission to tender evidence.*

| I. *State Governments and Union Territories* | *Names of Representatives* |
|---|---|
| 1. Andhra Pradesh | (*i*) Shri V. R. Rao, Special Secretary, Industries Department.<br>(*ii*) Shri S. P. Balasubramaniam, Special Officer, Co-operative Sugar Factories.<br>(*iii*) Shri M. Gopala Krishnan, Director, (Civil Supplies).<br>(*iv*) Shri M. R. Pai, Managing Director, Nizam Sugar Factory.<br>(*v*) Shri V. V. Ramana.<br>(*vi*) Shri G. D. Qureshi, Additional Director of Civil Supplies. |
| 2. Assam | Shri Ramesh Chandra, Secretary, Agriculture & Cooperation Department. |
| 3. Bihar | (*i*) Shri R. P. Khanna, Secretary, Department of Supply.<br>(*ii*) Shri J. Prasad, Cane Commissioner.<br>(*iii*) Shri N. K. N. Singh, Asstt. Cane Commissioner.<br>(*iv*) Shri J. K. Kohli, Special Officer-*cum*-Deputy Registrar, Cane Department. |
| 4. Delhi | Shri M. W. K. Yusafzai, Director of Civil Supplies. |
| 5. Gujarat | (*i*) Shri M. F. Chauhan, Deputy Director, Civil Supplies.<br>(*ii*) Shri D. K. Patil. |
| 6. Himachal Pradesh | Shri S. M. Goyal, Director, Civil Supplies. |
| *7. Jammu & Kashmir | |
| 8. Kerala | Shri Narayanaswamy, Liaison Officer. |
| 9. Maharashtra | Shri Nijamuddin Ahmad, Secretary, Co-operation and Rural Development Department. |
| 10. Madras | (*i*) Shri P. B. Krishnaswamy, Secretary, Board of Revenue (Civil Supplies).<br>(*ii*) Shri V. Krishnaswamy, Deputy Secretary, Industries Department. |
| 11. Madhya Pradesh | (*i*) Shri Y. Rama Rao, Joint Director (Agriculture) and Additional Cane Commissioner.<br>(*ii*) Shri P. C. Aggarwal, Jt. Director (Industries). |

सत्यमेव जयते

APPENDIX II—*contd.*

| | |
|---|---|
| 12. Mysore . . . . . . | Shri Nagendra Bahadur, Special Officer. |
| *13. Manipur . . . . . | |
| 14. Orissa . . . . . . | (*i*) Shri B. Ramadorai, Additional Director, Industries.<br>(*ii*) Shri A. M. Rao, Deputy Secretary, Supply Department. |
| 15. Punjab . . . . . . | (*i*) Shri Bhai Sher Jang Singh, Cane Commissioner.<br>(*ii*) Shri V. P. Dhawan, Deputy Director, (General) Food & Supplies Deptt.<br>(*iii*) Shri J. S. Saroya, Jt. Registrar, Co-operative Sugar Mills.<br>(*iv*) Shri W. C. Anand.<br>(*v*) Shri Dalbir Singh. |
| *16. Pondicherry | |
| 17. Rajasthan . . . . . | (*i*) Shri R. R. Purohit, Jt. Director, Industries Department.<br>(*ii*) Shri B.S. Bhatnagar, Sugarcane Development Officer. |
| 18. Tripura . . . . . | Shri A. K. Bhattacharya, Additional District Magistrate (Supply). |
| 19. Uttar Pradesh . . . . | Mr. M. Zunnurain, Sugar-*cum*-Cane Commissioner. |
| 20. West Bengal . . . . | Shri S. C. Ray, Addl. Director of Agriculture. |
| †21. Uttar Pradesh . . . . | Shri B. S. Seth, Excise Commissioner and Controller of Molasses. |

II. *Departments of Government of India*

| | |
|---|---|
| 1. Ministry of Food & Agriculture (Department of Food) | (*i*) Shri K. L. Pasricha, Joint Secretary and Vegetable Oil Products Controller of India.<br>(*ii*) Shri K. P. Jain, Chief Director, Directorate of Sugar and Vanaspati. |
| 2. Ministry of Law . . . . | Shri H. C. Daga, Joint Secretary and Legal Adviser. |
| 3. Ministry of Petroleum & Chemicals | Shri M. Ramakrishnayya, Joint Secretary. |

III. *Associations*

A. *Sugar Mills Associations*

| | |
|---|---|
| 1. Deccan Sugar Factories Association. | (*i*) Shri Gordhandas Jadvji.<br>(*ii*) Shri Babubali Gulabchand.<br>(*iii*) Shri M. L. Apte.<br>(*iv*) Shri S. K. Somaiya.<br>(*v*) Shri M. B. Lohia |

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*Did not appear for evidence.
†Did not come.

| | |
|---|---|
| 2. Indian Sugar Mills Association | (*i*) Shri D.R. Narang<br>(*ii*) Shri J.S. Mehta<br>(*iii*) Shri V.D. Jhunjhunwala<br>(*iv*) Shri M. Nopany<br>(*v*) Shri D.D. Puri<br>(*vi*) Shri R.P. Nevatia<br>(*vii*) Shri S.K. Somaiya<br>(*viii*) Shri S.R. Shroff<br>(*ix*) Shri J.M. Saha<br>(*x*) Shri P.R. Viswanathan<br>(*xi*) Shri Lala Bansidhar<br>(*xii*) Shri B.M. Thapar<br>(*xiii*) Shri K.S. Venkatapathy |
| 3. Joint East Uttar Pradesh and Bihar Sugar Factories Committee | (*i*) Shri V.D. Jhunjhunwala<br>(*ii*) Shri M.N. Pithe<br>(*iii*) Shri B.N. Mathur<br>(*iv*) Shri B.M. Thapar<br>(*v*) Shri Daya Ram<br>(*vi*) Shri S. Kanoria<br>(*vii*) Shri T. Kanoria<br>(*viii*) Shri M. Nopany<br>(*ix*) Shri Sitaram Jaipuria, M.P. |
| 4. National Federation of Cooperative Sugar Factories Limited | (*i*) Prof. D.R. Gadgil<br>(*ii*) Shri Vasantarao Patil<br>(*iii*) Shri Ratnappa Kumbha<br>(*iv*) Shri A.L.N. Moorthy<br>(*v*) Shri P.S. Rajagopal Naidu |
| 5. South India Sugar Mills Association | (*i*) Shri V.S. Tyagaraja Mudaliar<br>(*ii*) Shri G. Panchapakesan<br>(*iii*) Shri V. V. Ramana<br>(*iv*) Shri W. Rama Rao<br>(*v*) Shri R. Mainprice<br>(*vi*) Shri V.S. Shirgaokar<br>(*vii*) Shri M. Sitharama Rao |

*B. Sugar Merchants Associations*

| | |
|---|---|
| 1. Bombay Sugar Merchants Association | (*i*) Shri C.T. Sanghvi<br>(*ii*) Shri A.B. Karia |
| 2. Calcutta Sugar Merchants Association | (*i*) Shri Prabhudayal Dabriwala<br>(*ii*) Shri Baburam |
| 3. Cawnpore Sugar Merchants Association | Shri Ramcharan Bhartia |
| 4. Delhi Sugar Merchants Association | (*i*) Shri Jaman Lal Bhatia<br>(*ii*) Shri Nanak Singh Chawla<br>(*iii*) Shri D.P. Goel |
| 5. Muzaffarnagar Sugar Merchants Association | (*i*) Shri S.D. Tandon<br>(*ii*) Shri Hans Raj |
| 6. Punjab Wholesale Sugar Dealers Association | (*i*) Shri Pran Nath Sahgal<br>(*ii*) Shri Banarsi Das |

*. Gur and Khandsari Associations*

*1. Muzaffarnagar Gur & Khandsari Udyog Association

*2. Uttar Pradesh Gur & Khandsari Association

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*Did not appear for evidence.

## D. *Other Associations*

| | |
|---|---|
| 1. U.P. Co-operative Cane Growers' Unions Federation Limited | (*i*) Shri Virendra Singh<br>(*ii*) Shri Shatrughna Lal<br>(*iii*) Shri R.S. Mathur |
| 2. The Sugar Technologists Association of India | (*i*) Shri D.D .Puri<br>(*ii*) Shri Varma |
| 3. Federation of Indian Chambers of Commerce and Industry | (*i*) Shri G.L. Bansal<br>(*ii*) Shri Charat Ram<br>(*iii*) Shri A.D. Puri<br>(*iv*) Shri B.K. Aggarwal<br>(*v*) Dr. A.K. Mukherjee |
| 4. Federation of Biscuit Manufacturers of India | (*i*) Shri R.K. Mehra<br>(*ii*) Shri A.C. Khanna |
| 5. All-India Food Preservers Association | Shri K.U. Patil |
| 6. Indian Confectionary Manufacturers' Association | (*i*) Lala Bansidhar<br>(*ii*) Shri J.S. Mehta |
| 7. All-India Distillers Association | (*i*) Shri Bansidhar<br>(*ii*) Shri Hansraj Gupta<br>(*iii*) Shri V.H. Dalmia<br>(*iv*) Shri O.N. Chandoke |

## IV. *Expert Committees & Commissions*

| | |
|---|---|
| 1. Committee on Rehabilitation and Modernisation of Uneconomic Units in the Sugar Industry in India | (*i*) Shri S.N. Gundu Rao, Chairman<br>(*ii*) Shri N.C. Varma, Secretary |
| 2. Indian Central Sugarcane Committee | Shri K.S. Subha Rao |
| 3. Indian Institute of Sugarcane Research, Lucknow | Shri P.R. Panje, Director |
| 4. Khadi and Village Industries Commission | (*i*) Shri A.K. Karan<br>(*ii*) Shri S.B.L. Singhal |
| 5. National Productivity Council | (*i*) Shri G.K Nayar<br>(*ii*) Shri R.S. Gupta |
| 6. Shri K.C. Khanna, Retired Director, Sugarcane Research | |

# APPENDIX III

Registered **A.D.**

No. 6-1/64-SEC

SUGAR ENQUIRY COMMISSION

GOVERNMENT OF INDIA

Room No. 449-A, Krishi Bhawan,
New Delhi-1.

*Dated* 22 *Sept.*, 1964.

From

Dr. P. K. Mukherjee,
Secretary,
Sugar Enquiry Commission.

To

SUBJECT : *Sugar Enquiry—Submission of completed proformae*

Sir,

I have the honour to say that the Government of India have constituted a Sugar Enquiry Commission in exercise of the powers conferred by Section 3 of the Commissions of Inquiry Act, 1952 (60 of 1952), vide, Government of India, Ministry of Food and Agriculture (Department of Food), Notification No. S.O. 2670 dated 3Aug. 1964, published in Part II, Section 3, Sub-Section (ii) of the Gazette of India Extraordinary. The Commission proposes to enquire into the cost structure of the sugar industry. I am, accordingly, to request you kindly to furnish the details of cost of production of sugar for the accounting years 1961-62, 1962-63 and 1963-64, in respect of your factory, as in the attached set of proformae.

2. I am to add that if the accounts for the year 1963-64 have not yet been published, you may kindly prepare proforma final accounts certified by your Auditors and incorporate these figures in the proformae for 1963-64. The instructions for filling the proformae are also enclosed. All the proformae should be countersigned by the external Auditors and should also be supported by a statement reconciling the cost figures with the published/provisional accounts.

3. I am further to request you to furnish ten copies of the proformae, along with enclosures, duly completed in all respects, latest by 31 October, 1964. The receipt of the letter and its enclosures may kindly be acknowledged.

Yours faithfully,
(Sd.) N.M. BHARGAVA
for P. K. MUKHERJEE
*Secretary*

## APPENDIX IV

No. 6-3/64-SEC

SUGAR ENQUIRY COMMISSION

GOVERNMENT OF INDIA

Room No. 449-A, Krishi Bhawan,
New Delhi, the 28th Nov., 1964.

To

The Secretary to the
Government of ..../
Department of Agriculture.

SUBJECT: *Sugar Enquiry Commission—Supply of information to ........*

Sir,

I have the honour to say that the Sugar Enquiry Commission is interested to have information regarding (i) acreage, production and yield per acre of sugarcane and its competing crops and (ii) cost of production and prices thereof (a)in the existing sugar mill zones/areas, (b) areas in which State Government proposes to set up new sugar mills and (c) in other districts/areas with more than 5000 acres under sugarcane. I am, therefore, to request you kindly to furnish the Commission with the requisite information as per the enclosed proforma at a very early date.

Yours faithfully,

Sd./-P. K. MUKHERJEE

*Secretary*

Copy to Chief Secretary/Director of Agriculture,
Government of............/

सत्यमेव जयते

## APPENDIX V

*Tours undertaken by the Commission*

| State | Place | Details of visit | Parties met |
|---|---|---|---|
| *Uttar Pradesh* | Ramkola | M/s. Ramkola Sugar Mills Ltd., Ramkola, Distt. Deoria | 1. Shri Zunnurain, Sugar-*cum*-Cane Commissioner, Uttar Pradesh |
| | Padrauna | M/s. Cawnpore Sugar Mills Ltd. | 2. Management of the Factories<br>3. Cane Growers |
| | Lakshmiganj | M/s. Ishwari Khetan Sugar Mills Ltd. | Do. |
| | Deoria | M/s. Deoria Sugar Mills Ltd. | Do. |
| | Gauri Bazar | M/s. Cawnpore Sugar Works Ltd. | Do. |
| | Sardar Nagar | M/s. Saraya Sugar Mills Pvt. Ltd. | Do. |
| | Bagpat | M/s. The Bagpat Cooperative Sugar Mills Ltd. | Do. |
| | Shamli | M/s. The Upper Doab Sugar Mills Ltd. | |
| | Mansurpur | M/s. Sir Shadi Lal Sugar & General Mills Ltd. | Do. |
| | Modinagar | M/s. The Modi Sugar Mills | Do. |
| | Kanpur | National Sugar Institute | Do. |
| *Bihar* | Bihta | | 1. Chief Minister of Bihar |
| | Patna | | 2. Shri Jitendra Prashad, Cane Commissioner, Bihar |
| | Marhowrah | M/s. Cawnpore Sugar Works Ltd. | 3. Management of Factories |
| | Motipur | M/s. The Motipur Sugar Factory Pvt. Ltd. | 4. Cane growers |
| | Motihari | M/s. Hanuman Sugar & Industries Ltd. | Do. |
| | Bhainsalotan | Cane fields | Do. |

सत्यमेव जयते

APPENDIX V—*contd.*

| State | Place | Details of visit | Parties met |
|---|---|---|---|
| *Punjab* | Panipat | M/s. The Panipat Co-operative Sugar Mills Ltd. | 1. Shri Bhai Sher Jang Singh, Cane Commissioner, Punjab |
| | Yamunanagar | M/s. The Saraswati Sugar Mills | 2. Management of Factories<br>3. Cane growers |
| *Maharashtra* | Parite | M/s. Bhogwati Sahakari Sakhar Karkhana Ltd.<br>M/s. The Kolhapur Sugar Mills Ltd. | 1. Minister for Agriculture, Maharashtra<br>2. Minister for Cooperation, Maharashtra<br>3. Dr. D.R. Gadgil, Gokhale Institute of Economics & Politics, Poona |
| | Phaltan | M/s. Shriram Sahakari Sakhar Karkhana Ltd.<br>M/s. The Phaltan Sugar Works Ltd. | 4. Management of Factories |
| | Rahuri | M/s. The Rahuri Sahakari Sakhar Karkhana Ltd. | Do. |
| | Pravaranagar | M/s. The Pravara Sahakari Sakhar Karkhana Ltd. | Do. |
| | Sangli | M/s. Shetkari Sahakari Sakhar Karkhana Ltd.<br>(Cane harvesting Centre, poultry farm etc.) | Do. |
| *Andhra Pradesh* | Govada | M/s. Chodavaram Co-op. Agricultural & Industrial Society Ltd. | 1. Management of Factories |
| | Vuyyuru | M/s. K.C.P. Ltd. | Do. |
| | Tanuku | Andhra Sugar Ltd. | Do. |
| | Anakapalle | Sugar Cane Research Station | Director, Shri Lakshmi Kantam |
| *Madras* | Madurantakam | M/s. Madurantakam Co-op. Sugar Mills Ltd. | 1. Management of Factories. |
| | Erode | M/s. The Deccan Sugar & Abkhari Co. Ltd., P.O. Pugalur Sugar Factory | 2. Sugar Technologists. |
| | Salem | M/s. Salem Sugar Factory | |
| | Coimbatore | Sugarcane Breeding Institute | Dr. J. Thuljaram Rao |
| *Mysore* | Bangalore | Mandya | 1. State Government Officials<br>2. Representatives of Sugar Factories. |

## APPENDIX VI

### *List of Sugar Factories asked to submit data on Cost of Production of Sugar*

| *Serial No.* | *Name of Factory* |
|---|---|
| *South Bihar* | |
| 1. | M/s. Guraru Chini Mills, Guraru |
| 2. | „ Mohini Sugar Mills Ltd., Warisaliganj |
| 3. | „ South Behar Sugar Mills Ltd., Bihta |
| 4. | „ Rohtas Industries Ltd., Dalmianagar |
| *North Bihar* | |
| 5. | M/s. Lohat Sugar Works, Lohat |
| 6. | „ New India Sugar Mills Ltd., Hassanpur |
| 7. | „ Sakri Sugar Works, Sakri |
| 8. | „ Ryam Sugar Co. Ltd., Ryam |
| 9. | „ Samastipur Central Sugar Co. Ltd., Samastipur |
| 10. | „ Hanuman Sugar & Industries Ltd., Motihari |
| 11. | „ Motilal Padampat Sugar Mills Co. Pvt. Ltd., Majhaulia |
| 12. | „ Champaran Sugar Co. Ltd., Chanpatia Factory, Branch Chanpatia |
| 13. | „ Shree Krishna Gyanoday Sugar Ltd., Lauriya |
| 14. | „ North Bihar Sugar Mills Ltd., Bagaha |
| 15. | „ The New Swadeshi Sugar Mills Ltd., Narkatiaganj |
| 16*. | „ Harinagar Sugar Mills Ltd., Harinagar |
| 17. | „ The Sugauli Sugar Works Pvt. Ltd., Sugauli |
| 18. | M/s. Champaran Sugar Co. Ltd., Barrah, Factory Branch, Bara-Chakia |
| 19. | „ Belsund Sugar Co. Ltd., Righa |
| 20. | „ The Motipur Sugar Factory Pvt. Ltd., Motipur |
| 21. | „ The Sitalpore Sugar Works Ltd., Garaul |
| 22. | „ New Savan Sugar Mills, Siwan |
| 23. | „ Shree Krishna Gyanody Sugar Ltd., Mirganj |
| 24. | „ Bharat Sugar Mills Ltd., Sidhwalia |
| 25. | „ Cawnpore Sugar Works Ltd., Marhowrah Factory Branch, Marhowrah |
| 26. | „ Sasa Musa Sugar Works Pvt. Ltd., Sasa Musa |
| 27. | „ The Vishnu Sugar Mills Ltd., Gopalganj |
| 28. | „ The Behar Sugar Works Ltd., Pachrukhi |
| *Punjab* | |
| 1. | M/s. The Saraswati Sugar Mills, Yamunanagar |
| 2. | „ The Jagatjit Sugar Mills Co. Ltd., Phagwara |
| 3. | „ The Malwa Sugar Mills Co. Ltd., Dhuri |
| 4. | „ The Haryana Cooperative Sugar Mills Ltd., Rohtak |
| 5. | „ The Janta Cooperative Sugar Mills Ltd., Bhogpur |

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*Did not furnish the data.

## APPENDIX VI—*contd.*

| *Serial No.* | *Name of Factory* |
|---|---|
| | *Punjab*—contd. |
| 6. | M/s. The Panipat Cooperative Sugar Mills Ltd., Panipat |
| 7. | ,, The Marinda Cooperative Mills Ltd., Morinda |
| 8. | ,, Batala Cooperative Sugar Mills Ltd., Batala |
| | *West Bengal* |
| 1. | M/s. The Ramnugger Cane & Sugar Co. Ltd., Plassey |
| *2. | ,, The National Sugar Mills Ltd., Ahmedpur |
| | *Orissa* |
| 1. | M/s. Jeypore Sugar Co. Ltd., Rayagada |
| 2. | ,, Aska Cooperative Sugar Industries Ltd., No. J. 1091., Aska |
| | *Assam* |
| 1. | M/s. The Assam Cooperative Sugar Mills Ltd., Golaghat |
| | *Madras* |
| 1. | M/s. The Deccan Sugar & Abkhari Co. Ltd., Pugalur Sugar Factory |
| 2. | ,, Cauvery Sugars & Chemicals Ltd., Cauvery Factory |
| 3. | ,, Kothari Sugars & Chemicals Ltd., Lalgudi, Kattur |
| 4. | ,, The E.I.D. Parry Ltd., Nellikuppam |
| 5. | ,, North Arcot District Coop. Sugar Mills Ltd., Ambur Vadapudupet |
| 6. | ,, The Madura Sugars & Allied Products Ltd., Pandiarajapuram |
| 7. | ,, The Thiru Arooran Sugars Ltd., Vadapathimangalam |
| 8. | ,, Amaravathi Coop. Sugar Mills Ltd., Factory—Malvadi Road, Madathukulam |
| 9. | ,, The Madurantakam Coop. Sugar Mills Ltd., Madurantakam, Padalam |
| | *Pondicherry* |
| 1. | M/s. New Horizon Sugar Mills Co., Ltd., 25, Rue Francois Martin, Pondicherry |
| | *Andhra Pradesh* |
| 1. | M/s. The Deccan Sugar & Abkhari Co. Ltd., Samalkot |
| 2. | ,, The Kirlampudi Sugar Mills Ltd., Pithapuram |
| 3. | ,, Sri Sarvaraya Sugars Ltd., Chelluru, Factory Office |
| 4. | ,, Anakapalle Coop. Agricultural and Industrial Society Ltd., No. W. 41, Thummapala, Anakapalle |
| 5. | ,, The Etikoppaka Coop. Agri. & Industrial Society Ltd., Darlapudi |
| 6. | ,, The Thandava Coop. Agricultural & Industrial Society Ltd., (Tuni) Payakaraopeta |
| 7. | ,, The Chodavaram Co-operative Agricultural & Industrial Society Ltd., (Sugar Manufacturers), Govada |
| 8. | ,, The K.C.P. Lmited, Vuyyuru |
| 9. | ,, Challapalli Sugars Ltd., Laxmipuram, Challapalli |
| 10. | ,, The Andhra Sugar Ltd., Venkatarayapuram, P. B. No. 2, Tanuku |
| 11. | ,, V. V. S. Sugars (The Jeypore Sugar Co. Ltd.), Ghagallu |
| 12. | ,, The Palakol Co-operative Agricultural and Industrial Society Ltd., Palakol |
| *13 | ,, Shree Vijayalakshmi Sugar Mills, Paidiparru, Tanuku |
| 14. | ,, Shri Rama Sugars & Industries Ltd., Seethanagaram |
| 15. | ,, Shri Rama Sugars & Industries Ltd., Bobbili, Distt. Srikakulam Circle, Vizianagaram |

*Did not furnish the data.

APPENDIX VI—*contd.*

| *Serial No.* | *Name of Factory* |
|---|---|
| *Andhra Pradesh*—contd. | |
| 16. M/s. | Amadalavalasa Co-operative Agricultural and Industrial Society Ltd., Amadalavalasa |
| 17. ,, | The Nizam Sugar Factory Ltd., Shakarnagar, Distt. Nizamabad. (I & II Plant) |
| 18. ,, | The Chittoor Sugars Ltd., Chittoor. |
| *Rajasthan* | |
| 1. ,, | The Mewar Sugar Mills Ltd., Bhupalsagar |
| 2. ,, | The Ganganagar Sugar Mills Ltd., Sri Ganganagar |
| *Kerala* | |
| 1. M/s. | The Travancore Sugars & Chemicals Ltd., Pamba River Factory, Tiruvalla |
| 2. ,, | Mannam Coop. Sugar Mills Ltd., Pandalam, Distt Alleppey |
| *Maharashtra* | |
| 1. M/s. | The Saswad Mali Sugar Factory Ltd., Malinagar |
| 2. ,, | The Brihan Maharashtra Sugar Syndicate Ltd., Shreepur |
| 3. ,, | Yeshwant Sahakari Sakhar Karkhana Ltd., Akluj |
| 4. ,, | Walchandnagar Industries Ltd., Walchandnagar |
| 5. ,, | The Malegaon Sahakari Sakhar Karkhana Ltd., P.O. Shivnagar, Malagaon, B.K.Taluk-Baramati |
| 6. ,, | Shri Chhatrapati Shivaji Sahakhari Sakhar Karkhana Ltd., Bhawaninagar |
| 7. ,, | Shri Someshwar Sahakari Sakhar Karkhana Ltd., Nira |
| 8. ,, | The Ravalgaon Sugar Farm Ltd., Ravalgaon |
| 9. ,, | The Girna Sahakari Sakhar Karkhana Ltd., Dabbadi Taluk, Malegaon |
| *10. ,, | Niphad Sahakari Sakhar Karkhara Ltd., Bausahah Nagar |
| 11. M/s. | The Maharashtra Sugar Mills Ltd.,Tilaknagar |
| 12. ,, | The Belapur Co. Ltd., Harigaon |
| 13. ,, | The Belvandi Sugar Farm Pvt. Ltd., Belvandi Sugar Farm |
| 14. ,, | The Godavari Sugar Mills Ltd., Sakarwadi |
| 15. ,, | The Godavari Sugar Mills Ltd., Sakarwadi, Lakshmiwadi |
| 16. ,, | Shree Changadeo Sugar Mills Ltd., Changdeonagar |
| 17. ,, | The Kopergaon Sahakari Sakhar Karkhana Ltd., Kopargaon, Kolpodwadi |
| 18. ,, | The Pravara Sahakari Sakhar Karkhana Ltd., Pravaranagar |
| 19. ,, | The Rahuri Sahakari Sakhar Karkhana Ltd., Shrishivajinagar, Rahuri |
| 20. ,, | Ashok Sahakari Sakhar Karkhana Ltd., Ashoknagar, Srirampur |
| 21. ,, | Ganesh Sahakari Sakhar Karkhana Ltd., Rajangaon Khurd, Ganeshnagar |
| 22. ,, | The Sanjivani (Takli) Sahakari Sakhar Karkhana Ltd., Kopargaon |
| 23. ,, | Gangapur Sugar Mills Ltd., Ragunathnagar, Taluka, Gangapur |
| 24. ,, | The Phaltan Sugar Works Ltd., Sakharwadi |
| 25. ,, | Shriram Sahakari Sakhar Karkhana Ltd., Phaltan |
| 26. ,, | The Krishna Sahakari Sakhar Karkhana Ltd., Rethare Budruk |
| 27. ,, | The Kolhapur Sugar Mills Ltd., Kasaba Bavada, Kolhapur |
| 28. ,, | The Bhogawati Sahakari Sakhar Karkhana Ltd., Shahunagar |
| 29. ,, | Shree Panchganga Sahakari Sakhar Karkhana Ltd., Ichalkaranji |

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*Did not furnish the data.

## APPENDIX VI—*contd.*

| *Serial No.* | *Name of Factory* |
|---|---|
| *Maharashtra*—contd. | |
| 30. | M/s. Shree Warana Sahakari Sakhar Karkhana Ltd., Warananagar. |
| 31. | ,, Shree Dudhganga Vedganga Sahakari Sakhar Karkhana Ltd., Bidri |
| 32. | ,, Kumbi-Kasari, S.S. Karkhana Ltd., Kuditre, Koparde |
| 33. | ,, Shetkari Sahakari Sakhar Karkhana Ltd., Sangli |
| *Gujarat* | |
| 1. | M/s. Shree Khedut Sahakari Khand Udyog Mandli Ltd., Sardar Bag, Bardoli |
| 2. | ,, Shree Bileshwar Khand Udyog, Kedut Sahakari Mandli Ltd., Kodinar |
| 3. | ,, The Sahakari Khand Udyog, Mandli Ltd., Gandevi |
| *Madhya Pradesh* | |
| 1. | M/s. The Gwalior Sugar Co. Ltd., Dabra |
| 2. | ,, The Jaora Sugar Mills Pvt. Ltd., Jaora |
| 3. | ,, Seth Govindram Sugar Mills, P.O. Mehidpur Road |
| 4. | ,, The Jiwaji Rao Sugar Co. Ltd., Dalauda |
| 5. | ,, The Bhopal Sugar Industries Ltd., Sehore |
| *Mysore* | |
| 1. | M/s. The Mysore Sugar Co. Ltd., Mandya |
| 2. | ,, The Salar Jung Sugar Mills Ltd., Munirabad |
| 3. | ,, The India Sugars & Refineries Ltd., Hospet |
| 4. | ,, The Ugar Sugar Works Ltd., Ugar Khurd |
| 5. | ,, Tunghbadra Sugar Works (Pvt.) Ltd., Shimoga |
| 6. | ,, The Bellary Central Coop. Stores, Sugar Factory, Kampli |
| 7. | ,, Pandavapura Sahakari Sakhar Karkhana Ltd., Pandavapura |
| 8. | ,, Hiranyakeshi Sahakari Sakhar Karkhana Niyamit, Sankeshwar |

| *Serial No.* | *Name of Factory* |
|---|---|
| *Uttar Pradesh (East)* | |
| 1. | M/s. Deoria Sugar Mills Ltd., Deoria |
| 2. | ,, The Shankar Sugar Mills Ltd., Captainganj |
| 3. | ,, The Vishnu Pratap Sugar Works (Pvt) Ltd., Rajabazar (Khadda) |
| 4. | ,, Lakshmi Devi Sugar Mills Pvt. Ltd., Chhitauni |
| 5. | ,, The Ishwari Khetan Sugar Mills Ltd., Lakshmiganj |
| 6. | ,, The Ramkola Sugar Mills Co. Ltd., Ramkola |
| 7. | ,, Maheshwari Khetan Sugar Mills Pvt. Ltd., Ramkola |
| 8. | ,, Cawnpore Sugar Works Ltd., Padrauna Factory Branch, Padrauna |
| 9. | ,, Cawnpore Sugar Works Ltd., Kathkuiyan Factory Branch, Kathkuiyan |
| 10. | ,, Kamalapat Motilal Bhatni Sugar Mills, Bhatni |
| 11. | ,, The United Provinces Sugar Co., Seorahi |
| 12. | ,, The Purtabpore Co. Ltd., Chupra Dubbuli, Mairwa |
| 13. | ,, Shree Sitaram Sugar Co Ltd., Baitalpur |
| 14. | ,, Cawnpore Sugar Works Ltd., Gauri Bazar, Distt |
| 15. | ,, Saraya Sugar Mills Pvt. Ltd., Sardarnagar |
| 16. | ,, Diamond Sugar Mills Ltd., Pipraich |
| 17. | ,, The Punjab Sugar Mills Co. Ltd., Ghugli |
| 18. | ,, Mahabir Sugar Mills Pvt. Ltd., Siswabazar |
| 19. | ,, The Ganesh Sugar Mills Co. Ltd., Anandnagar |
| 20. | ,, The Burhwal Sugar Mills Ltd., Burhwal |
| 21. | ,, Ramchand & Sons Sugar Mills. Barabanki |

## APPENDIX VI—*contd.*

| *Serial No.* | *Name of Factory* |
|---|---|
| | *Uttar Pradesh (East)*—contd. |
| 22. | M/s. The Madho Mahesh Sugar Mills, Munderwa |
| 23. | ,, The Basti Sugar Mills Co. Ltd., Basti |
| 24. | ,, The Basti Sugar Mills Co. Ltd., Walterganj |
| 25. | ,, Shree Anand Sugar Mills Ltd., Khalilabad |
| 26. | ,, The Seksaria Sugar Mills Pvt. Ltd., Babhran |
| 27. | ,, Nawabganj Sugar Mills Co., Nawabganj |
| 28. | ,, Balrampur Sugar Co. Ltd., Balrampur |
| 29. | ,, Tulsipur Sugar Co. Ltd., Tulsipur Sugar Factory Branch, Tulsipur |
| 30. | ,, R. B. Lachhmandas Sugar & General Mills Pvt. Ltd., Jarwal Rd |
| 31. | ,, The Ratna Sugar Mills Co. Ltd., Shahganj |
| 32. | ,, Kamalapat Motilal Motinagar (Sugar Mills) Branch, Motinagar |
| | *Uttar Pradesh ( West)* |
| 33. | M/s. The Hindustan Sugar Mills Ltd., Golagokarannath |
| 34. | ,, The Gobind Sugar Mills Ltd., Aira Estate |
| 35. | ,, L.H. Sugar Factories & Oil Mills (Pvt.) Ltd., Pilibhit |
| 36. | ,, The Kesar Sugar Works Ltd., Baheri. |
| 37. | ,, H.R. Sugar Factory Pvt. Ltd., Nekpur, Bareilly |
| 38. | ,, The Neoli Sugar Factory, Manpurnagaria, Neoli |
| 39. | ,, L.H. Sugar Factories & Oil Mill Pvt. Ltd., Kashipur |
| 40. | ,, The Bazpur Coop. Sugar Factory Ltd., Bazpur |
| 41. | ,, The Modi Sugar Mills (Prop. Modi Industries Ltd.), Modinagar |
| 42. | M/s. Ram Luxman Sugar Mills, Mohiuddinpur |
| 43. | ,, Jaswant Sugar Mills Ltd., Maliana Meerut |
| 44. | ,, Daurala Sugar Works, Daurala |
| 45. | ,, Diwan Sugar Mills, Diwan nagar |
| 46. | ,, Mawana Sugar Works, Mawana |
| 47. | ,, The Simbhaoli Sugar Mills Pvt. Ltd., Simbhaoli |
| 48. | ,, The Bagpat Coop. Sugar Mills Ltd., Bagpat |
| 49. | ,, The Upper India Sugar Mills Ltd., Khatauli |
| 50. | ,, Sir Shadi Lal Sugar & General Mills Ltd., Mansurpur. |
| 51. | ,, The Amritsar Sugar Mills Co. Ltd., Rohanakalan, Rohana |
| 52. | ,, The Upper Doab Sugar Mills Ltd., Shamli |
| 53. | ,, Experimental Sugar Factory, National Sugar Institute, Kanpur |
| 54. | ,, The Mahalakshmi Sugar Mills Co. Ltd., Iqbalpur |
| 55. | ,, The Ganga Sugar Corporation Ltd., Deoband |
| 56. | ,, The Lord Krishna Sugar Mills Ltd., Saharanpur |
| 57. | ,, Kisan Cooperative Sugar Factory Ltd., Sarsawa |
| 58. | ,, Rai Bahadur Narain Singh Mills Pvt. Ltd., Laksar Jn |
| 59. | ,, The Seksaria Biswan Sugar Factory Pvt. Ltd., Biswan |
| 60. | ,, The Lakshmiji Sugar Mills Pvt. Ltd., Maholi |
| 61. | ,, The Lakshmi Sugar & Oil Mills Ltd., Hardoi |
| 62. | ,, Rosa Sugar Works of Carew & Co. Ltd., Rosa |
| 63. | ,, Shiv Prasad Banarsidas Sugar Mills, Bijnor |
| 64. | ,, Upper Ganges Sugar Mills Ltd., Seohara |

APPENDIX VI—*concld.*

| *Serial No.* | *Name of Factory* | *Serial No.* | *Name of Factory* |
|---|---|---|---|
| *Uttar Pradesh (West)*—contd. | | 69. | M/s. Raza Sugar Co. Ltd., Raza Factory, Rampur |
| 65. | M/s. The Dhampur Sugar Mills Ltd. Dhampur | 70. | „ Buland Sugar Co. Ltd., Buland Factory, Rampur |
| 66. | „ Shri Janki Sugar Mills & Co., Doiwala | 71. | „ Pannijee Sugar & General Mills Co., Panninagar |
| 67. | „ The Ajudhia Sugar Mills , Raja-ka-Shaspur | 72. | „ The Oudh Sugar Mills Ltd., Hargaon |
| 68. | „ Kundan Sugar Mills, Amroha | | |

सत्यमेव जयते

## APPENDIX VII

### *General Particulars Relating to Factories Selected for Cost Survey*

| Name of Unit | Location | District | Year of establishment | Original capacity (24 Hrs. tonnes) | Present capacity (24 Hrs. tonnes) | Type of organisation | Paid up capital Rs./lakhs | Process | Production Refined Sugar | Investigating Officer |
|---|---|---|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) |
| *Uttar Pradesh* | | | | | | | | | | |
| 1. M/s. Jaswant Sugar Mills Ltd. | Maliana | Meerut | 1931 | 254 | 1200 | J.S. | 30·00 | D.S. | 13,626 | Shri U.R. Padmanabhan, Cost Accounts Officer. |
| 2. M/s. Daurala Sugar Works | Daurala | Meerut | 1932 | 508 | 2032 | J.S. | .. | D.S. | 17,354 | Shri J. R. Bhalla, Assistant Cost Accounts Officer. |
| 3. The Simbholi Sugar Mills (P) Ltd. | Simbholi | Meerut | 1933 | 406 | 2032 | J.S. | 9·60 | D.S. | 20,047 | Shri M. Krishnamurthy, Assistant Cost Accounts Officer. |
| 4. The Bagpat Coop. Sugar Mills Ltd. | Bagpat | Meerut | 1960-61 | 1016 | 1220 | Co-op. | 45·53 | D.S.-D.C. | 12,867 | Do. |
| 5. The Upper Doab Sugar Mills Ltd. | Shamli | Muzaffarnagar | 1933 | 610 | 3050 | J.S. | 77·51 | D.S.-D.C. | 36,157 | Shri R. Venkatasubbiah, Cost Accountant.* |
| 6. The Lakshmiji Sugar Mills (P) Ltd. | Maholi | Sitapur | 1932 | 355 | 1524 | J.S. | 30·00 | D.S.-D.C. | 20,288 | Shri M. Vaidyanathan, Cost Accountant.* |

APPENDIX VII—*contd.*

| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) |
|---|---|---|---|---|---|---|---|---|---|---|
| 7. The Rosa Sugar Works of Carew & Co. Ltd. | Rosa | Shahjahanpur | 1875 | 737 | 774 | J.S. | 40·00 | D.S. | 10,295 | Shri M. Vaidyanathan Cost Accountant.* |
| 8. Raza Sugar Co. Ltd. | Rampur | Rampur | 1934 | 609 | 1130 | J.S. | 65·00 | D.S.-D.C. | 15,909 | Shri G.R. Sarma, Asstt. Cost Acounts Officer. |
| *Uttar Pradesh* | | | | | | | | | | |
| 9. M/s. Hindustan Sugar Mills Ltd. | Gola-Gokarnath | Kheri | 1932 | 406 | 3658 | J.S. | 125·00 | D.S. | 47,084 | Shri R. Venkatasubbiah, Cost Accountant.* |
| 10. Bazpur Co-operative Sugar Factory Ltd. | Bazpur | Nainital | 1958-59 | 1219 | 1219 | Co-op. | 80·18 | D.C. | 18,916 | Shri R.Venkatasubbiah, Cost Accountant.* |
| 11. The Lord Krishna Sugar Mills Ltd. | Saharanpur | Saharanpur | 1939-40 | 1219 | 1320 | J.S. | 12·00 | D.S. | 17,283 | Shri M. Vaidyanathan, Cost Accountant.* |
| 12. M/s. Cawnpore Sugar Works | Gauri-Bazar | Deoria | 1919-20 | 745 | 775 | J.S. | 40·00 | D.S. | 6,866 | Shri B. M. Ganguli, Cost Accountant.* |
| 13. The Burhwal Sugar Mills Ltd. | Burhwal | Barabanki | 1932-33 | 661 | 813 | J.S. | 15·00 | D.S. | 7,501 | Shri B. M. Ganguli. Cost Accountant.* |
| 14. The Basti Sugar Mills Co. Ltd. | Basti | Basti | 1928 | 405 | 1025 | J.S. | 15·00 | D.C.-D.S. | 9,526 | Shri R. Venkatasubbiah, Cost Accountant.* |
| 15. The Seksaria Sugar Mills (P) Ltd. | Babhnan | Gonda | 1932 | 457 | 883 | J.S. | 40·00 | D.S. | 7,163 | Shri B. M. Ganguli, Cost Accountant.* |
| 16. The Ramkola Sugar Mills Ltd. | Ramkola | Deoria | 1932 | 610 | 1524 | J.S. | 17·50 | D.C.-D.S. | 19,920 | Shri M.Vaidyanathan, Cost Accountant.* |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 17. The Purtabpore Sugar Mills (P) Ltd. | Mairwa | Deoria | 1903 | 174 | 965 | J.S. | 15·00 | D.C. | 9,308 | Shri V. Gopalakrishnan, Cost Accountant.* |
| 18. M/s. Saraya Sugar Mills (P) Ltd. | Sardarnagar | Gorakhpur | 1907 | 7 | 2642 | J.S. | 16·96 | D.S. | 21,504 | Shri K. V. Varadarajan, Cost Accountant.* |
| 19. M/s. Ganesh Sugar Mills Co. Ltd. | Anandnagar | Gorakhpur | 1932 | 305 | 1116 | J.S. | 20·00 | D.S. | 8,619 | Shri K. V. Varadarajan, Cost Acountant.* |
| 20. M/s. Ratna Sugar Mills Co. Ltd. | Shahganj | Jaunpur | 1933 | 535 | 1070 | J.S | 12·14 | D.S. | 6 252 | Shri V. Gopalakrishnan, Cost Accountant.* |
| *Bihar* | | | | | | | | | | |
| 21. Lohat Sugar Works of the Darbhanga Sugar Co. | Lohat | Darbhanga | 1914 | 405 | 1320 | J.S. | 38·01 | D.S. | 9,843 | Shri G. R. Sarma, Asstt. Cost Accounts Officer. |
| 22. Hanuman Sugar & Industies Ltd. | Motihari | Champaran | 1932 | 455 | 1016 | J.S. | .. | D.C. | 13,748 | Shri S. Ramamoorthy, Asstt. Cost Accounts Officer. |
| 23. Champaran Sugar Co. Ltd. | Barachakia | Champaran | 1906 | 941 | 941 | J.S. | 18·00 | D.C. | 8,973 | Shri G. R. Sarma, Asstt. Cost Accounts Officer. |
| 24. New Sawan Sugar Mills | Siwan | Saran | 1918 | 660 | 965 | J.S. | 14·65 | D.S. | 5,051 | Shri M. Krishnamurthy, Asstt. Cost Accounts Officer. |
| 25. Bharat Sugar Mills Ltd. | Sidhwalia | Saran | 1931 | 304 | 660 | J.S. | 20·00 | D.S. | 6,872 | Do. |
| 26. Ryam Sugar Co. Ltd. | Ryam | Darbhanga | 1930 | 792 | 1000 | J.S. | 24·00 | D.C. | 3,592 | Shri G. R. Sarma, Asstt. Cost Accounts Officer. |
| 27. Belsund Sugar Co. Ltd. | Righa | Muzaffarpur | 1932-33 | 863 | 1200 | J.S. | 29·24 | D.S. | 7,890 | Do. |

APPENDIX VII—*contd.*

| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) |
|---|---|---|---|---|---|---|---|---|---|---|
| *Punjab* | | | | | | | | | | |
| 28. The Panipat Co-op. Sugar Mills Ltd. | Panipat | Karnal | 1957-58 | 1250 | 1250 | Co.-op. | 50·92 | D.S. | 11,424 | Shri U. R. Padmanabhan, Cost Accounts Officer. |
| 29. The Janata Co-op. Sugar Mills Ltd. | Bhogpur | Jullundur | 1956-57 | 1016 | 1016 | Co-op. | 71·43 | D.C. | 5,610 | Shri J. R. Bhalla, Asstt. Cost Accounts Officer. |
| *Madhya Pradesh* | | | | | | | | | | |
| 30. The Bhopal Sugar Industries Ltd. | Sehore | Bhopal | 1938 | 762 | 1000 | J.S. | 30·00 | D.S. | 6,797 | Shri S. Ramamoorthy, Asstt. Cost Accounts Officer. |
| *West Bengal* | | | | | | | | | | |
| 31. Ramnuggar Cane & Sugar Co. Ltd. | Plassey | Nadia | 1936 | 610 | 1200 | J.S. | 20·60 | D.S. | 9,300 | Shri K. V. Varadarajan, Cost Accountant.* |
| *Orissa* | | | | | | | | | | |
| 32. Jeypore Sugar Co. Ltd. | Rayagoda | Koraput | 1937-38 | 203 | 600 | J.S. | 16·88 | D.S. | 3,625 | Shri S. Ramamoorthy, Asstt. Cost Accounts Officer. |
| *Assam* | | | | | | | | | | |
| 33. Assam Co-op. Sugar Mills Ltd. | Barua Bamungaon | Sibsagar | 1958-59 | 813 | 1016 | Co-op. | 46·37 | D.S. | 4,379 | Shri J. R. Bhalla, Asstt. Cost Accounts Officer. |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 34. Malegaon Sahakari Sakhar Karkhana Ltd. | Malegaon | Poona | 1957-58 | 1016 | 1016 | Co-op. | 74·74 | D.S. | 13,359 | Shri K. V. Varadarajan, Cost Accountant.* |
| 35. The Ravalgaon Sugar Farm Ltd. | Ravalgaon | Nasik | 1933 | 152 | 1219 | J.S. | 54·00 | D.S. | 13,051 | Shri J. R. Bhalla, Asstt. Cost Accounts Officer. |
| 36. Girna Sahakari Sakhar Karkhana Ltd. | Dabhadi | Nasik | 1958-59 | 1000 | 1000 | Co-op. | 36·86 | D.S. | 4,907 | Shri U. R. Padmanabhan, Cost Accounts Officer. |
| 37. The Maharashtra Sugar Mills Ltd. | Tilaknagar | Ahmednagar | 1933-34 | 254 | 1321 | J.S. | 99·50 | D.S. | 28,384 | Shri J. R. Bhalla, Asstt. Cost Accounts Officer. |
| 38. Shree Changdeo Sugar Mills Ltd. | Changdeonagar | Ahmednagar | 1941 | 406 | 850 | J.S. | 37·50 | D.S. | 8,612 | Shri R. Venkatasubbiah, Cost Accountant.* |
| 39. The Kopergaon Sahakari Sakhar Karkhana Ltd. | Kolpodwadi | Ahmednagar | 1955-56 | 1016 | 1016 | Co-op. | 39·86 | D.S. | 20,589 | Shri M. Krishnamurthy, Asstt. Cost Accounts Officer. |
| 40. The Pravara Sahakari Sakhar Karkhana Ltd. | Pravaranagar. | Do. | 1950 | 508 | 1220 | Co-op. | 44·66 | D.S. | 16,436 | Shri R. Venkatasubbiah Cost Accountant.* |
| 41. Shriram Sahakari Sakhar Karkhana Ltd. | Phalton | North Satara | 1957-58 | 1016 | 1016 | Co-op. | 53·04 | D.S. | 11,876 | Shri M. Krishnamurthy, Asstt. Cost Accounts Officer. |
| 42. The Krishan Sahakari Sakhar Karkhana Ltd. | Rethorebudra | Do. | 1960-61 | 1016 | 1250 | Co-op. | 78·77 | D.S. | 13,530 | Shri K. V. Varadarajan Cost Accountant.* |

## Appendix VII—*concld.*

| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) |
|---|---|---|---|---|---|---|---|---|---|---|
| *Maharashtra & Gujarat*—contd. | | | | | | | | | | |
| 43. The Kolhapur Sugar Mills Ltd. | Kasaba Bawada | Kolhapur | 1934 | 305 | 1750 | J.S. | 28·58 | D.S. | 33,908 | Shri R. Venkatasubbiah, Cost Accountant.* |
| 44. Shri Panchganga Sahakari Sakhar Karkhana Ltd. | Ichalkaranji | Do. | 1958-59 | 1016 | 1016 | Co-op. | 38·55 | D.S. | 14,448 | Shri M. Krishnamurthy, Asstt. Cost Accounts Officer. |
| 45. Shetkari Sahakari Sakhar Karkhana Ltd. | Sangli | Sangli | 1958-59 | 1016 | 1016 | Co-op. | 80·51 | D.S. | 10,075 | Shri K. V. Varadarajan, Cost Accountant.* |
| 46. Shri Bileswar Khand Udyog Khedut Sahakari Mandali Ltd. | Kodinar | Amreli | 1958-59 | 1016 | 1016 | Co-op. | 64·04 | D.S. | 23,441 | Shri J. R. Bhalla, Asstt. Cost Accounts Officer. |
| *Andhra Pradesh* | | | | | | | | | | |
| 47. Kirlampudi Sugar Mills Ltd. | Pithapuram | East Godavari | 1950-51 | 609 | 1016 | J.S. | 22·98 | D.S. | 6,084 | Shri S. Ramamoorthy, Asstt. Cost Accounts Officer. |
| 48. Etikopaka Coop. Agri. & Industrial Society Ltd. | Darlapudi | Visakhapatnam | 1953 | 609 | 1016 | Co-op. | 15·00 | D.S. | 11,550 | Shri M. Krishnamurthy, Asstt. Cost Accounts Officer. |
| 49. Sri Rama Sugar & Industries Ltd. | Bobbli | Srikakulam | 1933-34 | 152 | 457 | J.S. | 32·50 | D.S. | 9,034 | Shri S. Ramamoorthy, Asstt. Cost Accounts Officer. |
| 50. The K.C.P. Ltd.. | Vuyyuru | Krishna | 1934 | 610 | 2540 | J.S. | 111·93 | D.S. | 18,290 | Shri. M. Krishnamurthy, Asstt. Cost Accounts Officer |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 51. The Chittoor Co-op. Sugar Ltd. | Chittoor | Chittoor | 1962-63 | 1000 | 1000 | Co-op. | 43·67 | D.S. | 13,268 | Shri S. Ramamoorthy, Asstt. Cost Accounts Officer. |
| *Madras* | | | | | | | | | | |
| 52. Kothari Sugars & Chemicals Ltd. | Kattur | Trichi | 1962-63 | 1016 | 1016 | J.S. | 79·99 | D.S. | 11,432 | Shri K. V. Varadarajan, Cost Accountant.* |
| 53. Madurantakam Co-op. Sugar Mills Ltd. | Padalam | Chingleput | 1960-61 | 1016 | 1016 | Co-op. | 57·11 | D.S. | 9,288 | Shri K. V. Varadarajan, Cost Accountant.* |
| 54. North Arcot Distt. Cooperative Sugar Mills Ltd. | Ambur | North Arcot | 1960-61 | 813 | 813 | Co-op. | 49·93 | D.S. | 13,126 | Shri R. Venkatasubbiah, Cost Accountant.* |
| *Mysore* | | | | | | | | | | |
| 55. Tungbadra Sugar Works (P) Ltd. | Shimoga | Shimoga | 1957-58 | 1016 | 1016 | J.S. | 50·00 | D.S. | 5,531 | Shri M. Vaidyanathan, Cost Accountant.* |
| 56. Mysore Sugar Co. Ltd. | Mandya | Mandya | 1934 | 406 | 1800 | J.S. | 43·16 | D.S. | 22,045 | Shri K. V. Varadarajan, Cost Accountant.* |
| 57. Bellary Central Coop. Stores Sugar Factory | Bellary | Bellary | 1957-58 | 813 | 813 | Co-op. | 40·00 | D.S. | 15,478 | Shri R. Venkatasubbiah, Cost Accountant.* |
| 58. Hiranyakeshi Sahakari Sakkavi Karkhane Niyamit. | Sankeswar | Belgaum | 1960-61 | 1270 | 1270 | Co-op. | 44·86 | D.S. | 16,183 | Shri M. Vaidyanathan, Cost Accountant.* |

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*Investigated under the supervision of Shri U. R. Padmanabhan, Cost Accounts Officer.

J.S.—Joint Stock

## APPENDIX VIII

*Relative Position of the Sample of 58 Sugar Factories compared with All-India Pattern—Capacity*

| capacit | all factories | | | | | sample of 58 factories | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | number | percentage to total | capacity (tonnes) | percentage to total | average capacity (tonnes) | number | percentage to total | capacity (tonnes) | percentage to total | average capacity (tonnes) |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) |
| (*i*) upto 1000 . . . | 122 | 62·9 | 101357 | 47·0 | 831 | 34 | 58·6 | 29864 | 44·0 | 878 |
| (*ii*) 1001—1500 . . | 52 | 26·8 | 66044 | 30·6 | 1270 | 18 | 31·1 | 23009 | 33·8 | 1278 |
| (*iii*) above 1500 . . | 20 | 10·3 | 48350 | 22·4 | 2418 | 6 | 10·3 | 15050 | 22·2 | 2508 |
| total . . . | 194 | 100·0 | 215751 | 100·0 | 1112 | 58 | 100·0 | 67923 | 100·0 | 1171 |

## APPENDIX IX

*Relative Position of the Sample of 58 Sugar Factories compared with All-India Pattern—Process of Clarification*

| process of clarification | all factories | | | | | samp. of 58 factories | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | number | percentage to total | capacity (tonnes) | percentage to total | average capacity (tonnes) | number | perce [illegible] to | capacity (tonnes) | percentage to total | average capacity (tonnes) |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | [illegible] | (9) | (10) | (11) |
| (*i*) carbonation | 35 | 18·0 | 48870 | 22·7 | 1396 | 14 | [illegible] | 17610 | 25·9 | 1258 |
| (*ii*) sulphitation | 159 | 82·0 | 166881 | 77·3 | 1050 | 44 | [illegible] | 50313 | 74·1 | 1143 |
| total | 194 | 100·0 | 215751 | 100·0 | 1112 | 58 | [illegible] | 67923 | 100·0 | 1171 |

## APPENDIX X

### *Relative Position of the Sample of 58 Sugar Factories compared with All-India Pattern—Type of Organisation*

| type of organisation | all factories | | | | | sample of 58 factories | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | number | percentage to total | capacity (tonnes) | percentage to total | average capacity (tonnes) | number | percentage to total | capacity (tonnes) | percentage to total | average capacity (tonnes) |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) |
| (*i*) co-operative . . | 48 | 24·7 | 47950 | 22·2 | 999 | 20 | 34·5 | 20150 | 29·7 | 1008 |
| (*ii*) joint stock and others . | 146 | 75·3 | 167801 | 77·8 | 1149 | 38 | 65·5 | 47773 | 70·3 | 1257 |
| total . . . | 194 | 100·0 | 215751 | 100·0 | 1112 | 58 | 100·0 | 67923 | 100·0 | 1171 |

## APPENDIX XI

*Relative Position of the Sample of 58 Sugar Factories compared with All-India Pattern—New and Old Units*

| category | all factories | | | | | sample of 58 factories | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | number | percentage to total | capacity (tonnes) | percentage to total | average capacity (tonnes) | number | percentage to total | capacity (tonnes) | percentage to total | average capacity (tonnes) |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) |
| (*i*) old units . . . | 135 | 69·6 | 152601 | 70·7 | 1130 | 37 | 63·8 | 46123 | 67·9 | 1247 |
| (*ii*) new units . . | 59 | 30·4 | 63150 | 29·3 | 1070 | 21 | 36·2 | 21800 | 32·1 | 1038 |
| total . . . | 194 | 100·0 | 215751 | 100·0 | 1112 | 58 | 100·0 | 67923 | 100·0 | 1171 |

NOTE.—Factories established upto the end of 1952 have been classified as old units and those established after 1952 as new units.

## APPENDIX XII

*Relative Position of the Sample of 58 Sugar Factories compared with All-India Pattern—Zones*

| zone | all factories | | | | | sample of 58 factories | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | number | percentage to total | capacity (tonnes) | percentage to total | average capacity (tonnes) | number | percentage to total | capacity (tonnes) | percentage to total | average capacity (tonnes) |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) |
| I . . . . . | 42 | 21·6 | 45950 | 21·3 | 1094 | 15 | 25·9 | 16450 | 24·2 | 1097 |
| II . . . . . | 33 | 17·1 | 31490 | 14·6 | 954 | 10 | 17·3 | 11400 | 16·8 | 1140 |
| III . . . . . | 27 | 13·9 | 35340 | 16·4 | 1309 | 8 | 13·8 | 11600 | 17·1 | 1450 |
| IV . . . . . | 27 | 13·9 | 39147 | 18·1 | 1450 | 6 | 10·3 | 9475 | 13·9 | 1579 |
| V . . . . . | 64 | 33·0 | 63024 | 29·2 | 985 | 18 | 31·0 | 18198 | 26·8 | 1011 |
| VI . . . . . | 1 | 0·5 | 800 | 0·4 | 800 | 1 | 1·7 | 800 | 1·2 | 800 |
| total . | 194 | 100·0 | 215751 | 100·0 | 1112 | 58 | 100·0 | 67923 | 100·0 | 1171 |

# STATISTICAL TABLES

# *List of Statistical Tables*

| Table No. | Subject | Page |
|---|---|---|

SECTION I—*Sugarcane*

| | | |
|---|---|---|
| I.1 | Sowing and Harvesting Seasons | 232 |
| I.2 | Area, Production and Yield per Acre—1950-51—1964-65 | 233 |
| I.3 | Share of Important States in Area and Production—1950-51—1964-65 | 238 |
| I.4 | Index Number of Area, Production and Yield per Acre—1950-51—1964-65 | 239 |
| I.5 | Percentage of Irrigated Area to Total Area—1957-58—1961-62 | 240 |
| I.6 | Yield per Acre in Development Zones and Whole State | 241 |
| I.7 | Surveyed Area and Varietal Composition in Different States—1959-60 | 243 |
| I.8 | Linear Growth Rates of Area and Production—1952-53—1961-62 | 245 |
| I.9 | Utilisation for Different Purposes—1959-60—1963-64 | 246 |
| I.10 | Minimum Price | 247 |
| I.11 | Index Numbers of Production—Sugarcane, Sugar and Gur & Khandsari—1957-58—1963-64 | 249 |

SECTION II—*Sugar*

| | | |
|---|---|---|
| II.1 | All-India Production and Share of States—1950-51—1964-65 | 250 |
| II.2 | State-wise Production—1960-61—1964-65 | 252 |
| II.3 | Percentage Recovery and Duration of Crushing—1959-60—1963-64 | 253 |
| II.4 | Stocks, Production, Consumption, Imports and Exports—1950-51—1964-65 | 255 |
| II.5 | Number of Working Joint Stock and Cooperative Sugar Factories | 256 |
| II.6 | Index Numbers of Working Capacity—All-India and Important States—1951-52—1963-64 | 258 |
| II.7 | State-wise Installed Capacity of the Sugar Industry | 259 |
| II.8 | Exports by Destination—1957—1964 | 260 |
| II.9 | Exports—Break-down under Various Agreements and Sales to Free Markets—1962 to 1964 | 263 |
| II.10 | Amount of Subsidy given on Exports of Sugar—1957-58—1965-66 | 265 |
| II.11 | Rate of Excise Duty and Amount Collected—1950-51—1963-64 | 266 |

SECTION III—*Gur, Khandsari and Molasses*

| | | |
|---|---|---|
| III.1 | Gur and Khandsari : Production and Share of Important States—1956-57—1963-64 | 267 |
| III.2 | Gur and Khandsari: Cost of Production in Uttar Pradesh | 269 |
| III.3 | Molasses: Production—All-India and Share of Important States—1959-60—1963-64 | 270 |
| III.4 | List of Distilleries | 271 |

SECTION IV—*Miscellaneous*

| | | |
|---|---|---|
| IV.1 | Collections of Cane Cess/Purchase Tax and Expenditure on Sugarcane Development—1961-62—1962-63 | 274 |
| IV.2 | Details of Loans by Industrial Finance Corporation to Sugar Industry—1948-49—1963-64 | 275 |
| IV.3 | Sugar (Cane and Beet): World Production and Exports | 276 |
| IV.4 | Sugar (Cane and Beet): Share of Selected Exporting Countries in World Trade—1959—1963 | 277 |
| IV.5 | Sugarcane: Prices in Selected Producing Countries—1959—1963 | 278 |

TABLE I.1

*Sugarcane: Sowing and Harvesting Seasons*

| State | Sowing/Harvesting | Duration |
|---|---|---|
| (1) | (2) | (3) |
| I. *Sub-Tropical Region* | | |
| Uttar Pradesh | Sowing | Feb.—April |
| | Harvesting | Nov.—April |
| Bihar | Sowing | Dec.—Feb. |
| | Harvesting | Nov.—March |
| Punjab | Sowing | March—April |
| | Harvesting | Dec.—March |
| Madhya Pradesh | Sowing | Dec.—March |
| | Harvesting | Dec.—Sept. |
| Rajasthan | Sowing | Jan.—May |
| | Harvesting | Nov.—Feb. |
| West Bengal | Sowing | Dec.—April |
| | Harvesting | Dec.—March |
| Orissa | Sowing | Feb.—May |
| | Harvesting | Nov.—Feb. |
| Assam | Sowing | March—April |
| | Harvesting | Sept.—January |
| II. *Tropical Region* | | |
| Maharashtra | Sowing | Nov.—Dec., Jan.—March |
| | Harvesting | Oct.—March, Dec.—Feb. |
| Andhra Pradesh | Sowing | Jan.—April |
| | Harvesting | Dec.—March |
| Madras | Sowing | Dec.—Sept. |
| | Harvesting | Dec.—August. |
| Mysore | Sowing | January |
| | Harvesting | December |
| Gujarat | Sowing | Nov.—Dec., Jan.—March |
| | Harvesting | Oct.—March, Dec.—Feb. |
| Kerala | Sowing | Nov.—Feb. |
| | Harvesting | Jan.—March |
| Pondicherry | Sowing | Dec.—September |
| | Harvesting | Dec.—September |

*Source* : Agricultural Situation in India, August, 1961.

### TABLE I·2

### *Sugarcane: Area, Production and Yield per Acre*—1950-51—1964-65

A—Area—'000 acres.
P—Production (cane)—'000 tonnes.
Y—Yield per acre—tonnes.

| State | | 1950-51 | 1951-52 | 1952-53 | 1953-54 | 1945-55 | 1955-56 | 1956-57 | 1957 -58 |
|---|---|---|---|---|---|---|---|---|---|
| (1) | | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| I. *All-India* | | | | | | | | | |
| | A | 4,217 | 4,792 | 4,272 | 3,485 | 3,999 | 4,564 | 5,066 | 5,122 |
| | P | 69,220 | 74,760 | 61,860 | 53,848 | 70,549 | 72,692 | 82,908 | 83,651 |
| | Y | 16·4 | 15·6 | 14·5 | 15·5 | 17·6 | 15·9 | 16·4 | 16·3 |
| II. *Sub-Tropical Region* | | | | | | | | | |
| Uttar Pradesh | A | 2,505 | 2,965 | 2,645 | 1,973 | 2,292 | 2,720 | 3,066 | 3,031 |
| | P | 40,030 | 43,690 | 36,550 | 28,586 | 38,989 | 40,537 | 48,222 | 42,333 |
| | Y | 16·0 | 14·7 | 13·8 | 14·5 | 17·0 | 14·9 | 15·7 | 14·0 |
| Bihar | A | 410 | 336 | 359 | 299 | 326 | 378 | 403 | 376 |
| | P | 4,360 | 3,410 | 3,480 | 3,476 | 3,480 | 4,131 | 5,198 | 4,570 |
| | Y | 10·6 | 10·1 | 9·7 | 11·6 | 10·7 | 10·9 | 12·9 | 12·2 |
| Punjab | A | 373 | 466 | 434 | 387 | 414 | 452 | 487 | 499 |
| | P | 4,660 | 5,690 | 5,170 | 4,672 | 5,479 | 5,896 | 5,710 | 7,196 |
| | Y | 12·5 | 12·2 | 11·9 | 12·1 | 13·2 | 13·0 | 11·7 | 14·4 |
| Madhya Pradesh | A | 90 | 105 | 80 | 67 | 71 | 100 | 131 | 116 |
| | P | 925 | 975 | 813 | 681 | 752 | 1,168 | 1,699 | 1,195 |
| | Y | 10·3 | 9·3 | 10·2 | 10·2 | 10·6 | 11·7 | 13·0 | 10·3 |
| Assam | A | 58 | 59 | 68 | 64 | 65 | 64 | 63 | 63 |
| | P | 830 | 810 | 930 | 759 | 884 | 812 | 815 | 846 |
| | Y | 14·3 | 13·7 | 13·7 | 11·9 | 13·6 | 12·7 | 12·9 | 13·4 |

TABLE I·2—*contd.*

| State | | 1950-51 | 1951-52 | 1952-53 | 1953-54 | 1954-55 | 1955-56 | 1956-57 | 1957-58 |
|---|---|---|---|---|---|---|---|---|---|
| (1) | | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| III. *Tropical Region* | | | | | | | | | |
| Maharashtra | A | 185 | 207 | 180 | 176 | 183 | 189 | 214 | 280 |
| | P | 5,009 | 5,751 | 4,389 | 4,250 | 5,294 | 5,009 | 5,438 | 8,769 |
| | Y | 27·1 | 27·8 | 24·4 | 24·1 | 28·9 | 26·5 | 25·4 | 31·3 |
| Andhra Pradesh | A | 178 | 199 | 138 | 139 | 175 | 175 | 190 | 189 |
| | P | 4,910 | 5,430 | 3,860 | 3,849 | 5,150 | 5,258 | 6,293 | 6,470 |
| | Y | 27·6 | 27·3 | 28·0 | 27·7 | 29·4 | 30·0 | 33·1 | 34·2 |
| Madras | A | 123 | 124 | 73 | 78 | 125 | 121 | 115 | 143 |
| | P | 3,760 | 3,800 | 2,280 | 2,582 | 4,260 | 3,970 | 3,542 | 4,377 |
| | Y | 30·6 | 30·6 | 31·2 | 33·1 | 34·1 | 32·8 | 30·8 | 30·6 |
| Mysore | A | 103 | 115 | 103 | 112 | 112 | 117 | 124 | 144 |
| | P | 2,380 | 2,530 | 1,910 | 2,172 | 2,760 | 2,977 | 3,216 | 3,710 |
| | Y | 23·1 | 22·0 | 18·5 | 19·4 | 24·6 | 25·4 | 25·1 | 25·8 |
| IV. Others | A | 192 | 216 | 192 | 190 | 236 | 248 | 273 | 281 |
| | P | 2,356 | 2,674 | 2,478 | 2,821 | 3,501 | 2,934 | 2,775 | 4,185 |
| | Y | 12·3 | 12·4 | 12·9 | 14·8 | 14·8 | 11·8 | 10·2 | 14·9 |

TABLE I.2—*contd.*

| 1958-59 | 1959-60 | 1960-61 | 1961-62 | 1962-63 (Partially Revised Estimate) | 1963-64 (Partially Revised Estimate) | 1964-65 (Final Estimate) |
|---|---|---|---|---|---|---|
| (10) | (11) | (12) | (13) | (14) | (15) | (16) |
| 4,814 | 5,281 | 5,968 | 5,066 | 5,635 | 5,577 | 6,287 |
| 86,149 | 91,394 | 110,544 | 967 | 94,470 | 104,908 | 122,127 |
| 17·9 | 17·3 | 18·5 | ·1 | 16·8 | 18·8 | 19·4 |
| 2,747 | 2,944 | 3,284 | 3,367 | 3,118 | 3,036 | 3,433 |
| 42,419 | 44,442 | 54,516 | 51,257 | 43,198 | 47,546 | 58,388 |
| 15·4 | 15·1 | 16·6 | 15·2 | 13·9 | 15·7 | 17·0 |
| 405 | 443 | 458 | 487 | 400 | 348 | 409 |
| 6,152 | 6,751 | 7,038 | 6,330 | 4,877 | 5,165 | 6,859 |
| 15·2 | 15·2 | 15·4 | 13·0 | 12·2 | 14·8 | 16·8 |
| 503 | 590 | 665 | 670 | 644 | 576 | 684 |
| 7,615 | 8,935 | 10,579 | 8,870 | 8,443 | 8,930 | 11,650 |
| 15·1 | 15·1 | 15·9 | 13·2 | 13·1 | 15·5 | 17·0 |
| 85 | 99 | 124 | 136 | 139 | 132 | 160 |
| 908 | 1,081 | 1,359 | 1,422 | 1,445 | 1,294 | 1,698 |
| 10·7 | 10·9 | 11·0 | 10·5 | 10·4 | 9·8 | 10·6 |
| 68 | 69 | 68 | 71 | 70 | 70 | 74 |
| 984 | 861 | 945 | 1,148 | 998 | 1,119 | 1,110 |
| 14·5 | 12·5 | 13·9 | 16·2 | 14·3 | 16·0 | 15·0 |

TABLE I.2—*contd.*

| State | | 1958-59 | 1959-60 | 1960-61 | 1961-62 | 1962-63 (Partially Revised Estimate) | 1963-64 (Partially Revised Estimate) | 1964-65 (Final Estimate) |
|---|---|---|---|---|---|---|---|---|
| (1) | | (10) | (11) | (12) | (13) | (14) | (15) | (16) |
| III. *Tropical Region* | | | | | | | | |
| Maharashtra | A | 292 | 329 | 384 | 381 | 349 | 346 | 352 |
| | P | 9,025 | 9,368 | 12,089 | 10,995 | 11,457 | 11,855 | 12,048 |
| | Y | 30·9 | 28·5 | 31·5 | 28·9 | 32·8 | 34·3 | 34·2 |
| Andhra Pradesh | A | 183 | 204 | 226 | 237 | 225 | 316 | 330 |
| | P | 6,790 | 6,294 | 6,748 | 7,266 | 7,156 | 10,011 | 10,479 |
| | Y | 37·1 | 30·9 | 29·9 | 30·7 | 31·8 | 31·7 | 31·8 |
| Madras | A | 136 | 146 | 200 | 187 | 180 | 201 | 206 |
| | P | 4,154 | 4,257 | 6,311 | 5,818 | 5,724 | 6,228 | 6,320 |
| | Y | 30·5 | 29·2 | 31·6 | 31·1 | 31·8 | 31·0 | 30·7 |
| Mysore | A | 146 | 157 | 179 | 192 | 177 | 191 | 190 |
| | P | 3,765 | 4,411 | 5,184 | 5,789 | 5,802 | 6,634 | 6,235 |
| | Y | 25·8 | 28·1 | 29·0 | 30·2 | 32·8 | 34·7 | 32·8 |
| IV. Others | A | 249 | 300 | 380 | 338 | 333 | 361 | 449 |
| | P | 4,337 | 4,994 | 5,775 | 5,072 | 5,370 | 6,126 | 7,340 |
| | Y | 17·4 | 16·6 | 15·2 | 15·0 | 16·1 | 17·0 | 16·3 |

NOTES.—(1) The area figures are based on official published data as these are generally comparable over time whereas the production figures have been adjusted to make them comparable over time. Yield per acre has been obtained by simple division from the above area and production figures.

(2) The method of adjustment of production figure is as follows:

(*i*) The all-India adjusted figures of sugarcane (in terms of gur) were first worked out on the basis of index numbers of sugarcane (in terms of gur) with 1961-62 (fully revised estimates) as base. The surgarcane adjusted (cane) figures were then arrived at by applying the gur-cane ratio as observed in the published estimates for each year.

(*ii*) Data for Andhra Pradesh from 1950-51 to 1953-54, Assam and Bihar from 1950-51 to 1956-57, Punjab from 1950-51 to 1960-61, Madras and Uttar Pradesh from 1950-51 to 1959-60 and Mysore from 1950-51 to 1957-58 have been adjusted on the basis of the relationship between the production estimates based on the traditional method and crop cutting surveys in the year of change in these States.

(*iii*) For the rest of the States actual production data have been taken.

(3) Other States include Gujarat, Jammu & Kashmir, Kerala, Orissa, Rajasthan, West Bengal, Delhi, Himachal Pradesh and Tripura.

*Source*: Directorate of Economics and Statistics, Ministry of Food and Agriculture.

### TABLE I.3

*Sugarcane : Share of Important States in Area and Production*—1950-51—1964-65

A—Area
P—Production

| State | | 1950-51 | 1951-52 | 1952-53 | 1953-54 | 1954-55 | 1955-56 | 1956 57 | 1957-58 | 1958-59 | 1959-60 | 1960-61 | 1961-62 | 1962-63 | 1963-64 | 1964-65 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (1) | | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) |
| I. *Sub-Tropical Region* | | | | | | | | | | | | | | | | |
| Uttar Pradesh | A | 59·4 | 61·9 | 61·9 | 56·6 | 57·3 | 59·6 | 60·5 | 59·2 | 57·1 | 55·7 | 55·0 | 55·5 | 55·3 | 54·4 | 54·6 |
| | P | 57·8 | 58·4 | 59·1 | 53·1 | 55·3 | 55·8 | 58·2 | 50·6 | 49·2 | 48·6 | 49·3 | 49·3 | 45·7 | 45·3 | 47·8 |
| Bihar | A | 9·7 | 7·0 | 8·4 | 8·6 | 8·2 | 8·3 | 8·0 | 7·3 | 8·4 | 8·4 | 7·7 | 8·0 | 7·1 | 6·2 | 6·5 |
| | P | 6·3 | 4·6 | 5·6 | 6·5 | 4·9 | 5·7 | 6·3 | 5·5 | 7·1 | 7·4 | 6·4 | 6·1 | 5·2 | 4·9 | 5·6 |
| Punjab | A | 8·8 | 9·7 | 10·2 | 11·1 | 10·4 | 9·9 | 9·6 | 9·7 | 10·4 | 11·2 | 11·1 | 11·0 | 11·4 | 10·3 | 10·9 |
| | P | 6·7 | 7·6 | 8·4 | 8·7 | 7·8 | 8·1 | 6·9 | 8·6 | 8·8 | 9·8 | 9·6 | 8·5 | 8·9 | 8·5 | 9·5 |
| *Tropical Region* | | | | | | | | | | | | | | | | |
| Maharashtra | A | 4·4 | 4·3 | 4·2 | 5·1 | 4·6 | 4·1 | 4·2 | 5·5 | 6·1 | 6·2 | 6·3 | 6·3 | 6·2 | 6·2 | 5·6 |
| | P | 7·2 | 7·7 | 7·1 | 7·9 | 7·5 | 6·9 | 6·6 | 10·5 | 10·5 | 10·3 | 10·9 | 10·6 | 12·1 | 11·3 | 9·9 |
| Andhra Pradesh | A | 4·2 | 4·2 | 3·2 | 4·0 | 4·4 | 3·8 | 3·8 | 3·7 | 3·8 | 3·9 | 3·8 | 3·9 | 4·0 | 5·7 | 5·2 |
| | P | 7·1 | 7·3 | 6·2 | 7·1 | 7·3 | 7·2 | 7·6 | 7·7 | 7·9 | 6·9 | 6·1 | 7·0 | 7·6 | 9·5 | 8·6 |
| Madras | A | 2·9 | 2·6 | 1·7 | 2·2 | 3·1 | 2·7 | 2·3 | 2·8 | 2·8 | 2·8 | 3·4 | 3·1 | 3·2 | 3·6 | 3·3 |
| | P | 5·4 | 5·1 | 3·7 | 4·8 | 6·0 | 5·5 | 4·3 | 5·2 | 4·8 | 4·7 | 5·7 | 5·6 | 7·6 | 5·9 | 5·2 |
| Mysore | A | 2·4 | 2·4 | 2·4 | 3·2 | 2·8 | 2·6 | 2·4 | 2·8 | 3·0 | 3·0 | 3·0 | 3·2 | 3·1 | 3·4 | 3·0 |
| | P | 3·4 | 3·4 | 3·1 | 4·0 | 3·9 | 4·1 | 3·9 | 4·4 | 4·4 | 4·8 | 4·7 | 5·6 | 6·1 | 6·3 | 5·1 |

NOTE.—Based on data supplied by Directorate of Economics and Statistics, Ministry of Food and Agriculture.

## TABLE I.4

### *Sugarcane : Index Numbers of Area, Production and Yield per Acre*—1950-51—1964-65

(Agricultural year 1949-50=100)

| Year | Area | Production | Yield per acre |
|---|---|---|---|
| (1) | (2) | (3) | (4) |
| 1950-51 . . . . | 116·4 | 113·7 | 97·7 |
| 1951-52 . . . . | 132·2 | 122·8 | 92·9 |
| 1952-53 . . . . | 117·8 | 101·6 | 86·2 |
| 1953-54 . . . . | 96·0 | 89·5 | 93·2 |
| 1954-55 . . . . | 109·6 | 115·9 | 105·7 |
| 1955-56 . . . . | 125·1 | 119·8 | 95·7 |
| 1956-57 . . . . | 138·9 | 137·1 | 98·8 |
| 1957-58 . . . . | 140·4 | 138·1 | 98·4 |
| 1958-59 . . . . | 132·0 | 141·5 | 107·2 |
| 1959-60 . . . . | 144·8 | 153·3 | 105·9 |
| 1960-61 . . . . | 163·6 | 183·9 | 112·4 |
| 1961-62 . . . . | 166·3 | 173·6 | 104·3 |
| 1962-63 . . . . | 154·5 | 156·8 | 101·5 |
| 1963-64 . . . . | 152·8 | 173·9 | 113·8 |
| 1964-65 . . . . | 172·3 | 202·1 | 117·3 |

NOTES.—1. The indices for 1962-63 and 1963-64 are based on Partially Revised Estimates while those for 1964-65 are generally based on Final Estimates. The indices for these years are, therefore, subject to revision.

2. Index numbers of production are calculated on the basis of production figures of sugarcane in terms of gur. The above index numbers of production and yield per acre do not, therefore, strictly correspond to the production and yield per acre figures given in table no. I.2 which are in terms of cane..

*Source*: Directorate of Economics and Statistics, Ministry of Food and Agriculture

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## TABLE I.5

*Sugarcane : Percentage of Irrigated Area to Total Area*—1957-58—1961-62

| Region/State | 1957-58 | 1958-59 | 1959-60 | 1960-61 | 1961-62 |
|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) |
| I. *All-India* . . . . | 66·6 | 68·8 | 69·1 | 69·1 | 67·9 |
| ('000 acres) . . . . | (3,411) | (3,310) | (3,651) | (4,125) | (4,120) |
| II. *Sub-Tropical Region* . | 61·0 | 63·3 | 63·7 | 63·0 | 61·6 |
| Uttar Pradesh . . | 62·4 | 66·7 | 66·6 | 65·7 | 63·4 |
| Bihar . . . . . | 23·7 | 26·7 | 28·4 | 24·5 | 27·3 |
| Punjab . . . . . | 71·7 | 72·0 | 74·2 | 74·4 | 75·5 |
| Madhya Pradesh . . | 94·0 | 94·1 | 94·9 | 94·4 | 93·4 |
| Rajasthan . . . | 92·9 | 93·9 | 89·9 | 91·2 | 91·7 |
| West Bengal . . . | 46·6 | 43·9 | 35·8 | 29·3 | 34·1 |
| Orissa . . . . | 100·0 | 100·0 | 100·0 | 93·7 | 95·2 |
| III. *Tropical Region* . . | 96·3 | 95·7 | 95·7 | 96·6 | 96·9 |
| Maharashtra . . . | 100·0 | 100·0 | 100·0 | 99·7 | 100·0 |
| Andhra Pradesh . . | 95·8 | 95·1 | 92·6 | 95·6 | 94·5 |
| Madras . . . . . | 99·3 | 98·5 | 99·3 | 100·0 | 100·0 |
| Mysore . . . . | 95·8 | 94·5 | 94·9 | 94·4 | 96·4 |
| Gujarat . . . . | 100·0 | 100·0 | 100·0 | 98·4 | 100·0 |
| Kerala . . . . . | 54·5 | 54·5 | 54·5 | 32·2 | 43·5 |

**NOTE.**—Based on data supplied by Directorate of Economics and Statistics, Ministry of Food and Agriculture.

सत्यमेव जयते

### TABLE I·9

### *Sugarcane : Utilisation for Different Purposes*—1959-60—1963-64

| Year (November—October) | Total production of cane ('000 tonnes) | Percentage of total sugarcane production utilised for | | |
|---|---|---|---|---|
| | | Manufacture of sugar | Gur and Khandsari | Other purposes* |
| (1) | (2) | (3) | (4) | (5) |
| 1959-60 . . . . . . | 91,394 | 27·2 | 60·5 | 12·3 |
| 1960-61 . . . . . . | 110,544 | 28·2 | 59·5 | 12·3 |
| 1961-62 . . . . . . | 103,967 | 26·9 | 60·8 | 12·3 |
| 1962-63 . . . . . . | 94,470 | 22·0 | 65·9 | 12·1 |
| 1963-64 . . . . . . | 104,908 | 24·6 | 63·4 | 12·0 |

*Such as seed requirements, chewing, juice making, etc.

NOTE.—The all-India adjusted figures of sugarcane (in terms of gur) were first worked out on the basis of index numbers of sugarcane (in terms of gur) with 1961-62 (fully revised estimates) as base. The sugarcane adjusted (cane) figures were then arrived at by applying the gur-cane ratio as observed in the published Estimates for each year.

*Source* : Directorate of Economics and Statistics, Ministry of Food and Agriculture.

सत्यमेव जयते

## TABLE I.10

*Sugarcane: Minimum Price*

| Season | Date of announcement of price | Price at factory gate Rs. per maund | Price at factory gate Rs. per quintal | Price at rail head centres (Rs. per quintal) |
|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) |
| 1950-51 | 18-10-50 | 1·62 | 4·34 | . . |
| | 1-12-50 | 1·75 | 4·69 | . . |
| 1951-52 | 18-10-51 | 1·75 | 4·69 | . . |
| 1952-53 | 25-9-52 | 1·31 | 3·52 | . . |
| 1953-54 | 23-9-53 | 1·44 | 3·85 | 3·52 |
| 1954-55 | 23-9-54 | 1·44 | 3·85 | 3·52 |
| 1955-56 | 29-9-55 | 1·44 | 3·85 | 3·52 |
| | 17-11-55 | 1·44 | 3·85 | 3·52 |
| 1956-57 | March '56 | 1·44 | 3·85 | 3·52 |
| | Dec. '56 | 1·44 | 3·85 | 3·52 |
| 1957-58 | 8-5-57 | 1·44 | 3·85 | 3·52 |
| 1958-59 | Dec. '58 | 1·44 | 3·85 | 3·52 |
| 1959-60 | 25-10-59 | 1·62 | 4·34 | 4·02 |
| 1960-61 | May 1960 | 1·62 | 4·34 | 4·02 |
| 1961-62 | 21-4-61 | 1·62 | 4·34 | 4·02 |
| 1962-63 | 3-7-62 | 1·62 | 4·34 | 4·02 |
| | | (For a recovery of 9·8%) | | |
| | | | 4·02 | 3·70 |
| | | (For a recovery of 9·0 % or below) | | |
| 1963-64 | 17-5-63 | 1·62 | 4·34 | |
| | | (For a recovery of 9·0% and below) | | |
| | 31-10-63 | 1·74 | 4·66 | |
| | 12-12-63 | 1·75 | 4·69 | |
| | | (For a recovery of 9·0% and below) | | |
| 1964-65 | March '64 | 1·85 | 4·96 | |
| | | (For a recovery of 9·4 %) | | |
| | 14-10-64 | 2·00 | 5·36 | |
| | | (For a recovery of 10·4 % and below) | | |

सत्यमेव जयते

During 1962-63 season, the price at Rs. 4·34 per quintal of sugarcane for delivery at the gate of factory was linked to a recovery of 9·8%. A discount or premium, as the case may be, was allowed on this price at the rate of 4nP. per quintal for every 0·1 % fall or rise in the average certified recovery of the factory for a prescribed duration during 1961-62 season, provided that the minimum price payable shall be Rs. 4·02 per quintal for a recovery of 9% or less. The price for delivery at purchasing centres connected by rail was Rs. 4·02 per quintal of cane with corresponding discount or premia, at the prescribed rate provided that the minimum price payable at such centres shall be Rs. 3·70 per quintal of cane for a recovery of 9% or less.

For the year 1963-64, the minimum price of sugarcane linked to a recovery of 9% was fixed at Rs. 4·69 per quintal with provision for increase of 4·0 nP. per quintal for every 0·1% increase in recovery. The factories in areas where competition with gur and khandsari was intense, were permitted to pay Rs. 5·36 per quintal in case the notified minimum price was less than Rs. 5·36 per quintal. The deduction which factories used to make on account of transport of cane delivered by cane growers to them at roadside purchasing centres was limited to 32 nP. per quintal instead of up to 96 nP. per quintal allowed until the season 1962-63, calculated at the rate of 4 nP. per quintal per mile. This was done to give an advantage up to 64 nP. per quintal to the cane growers supplying cane from more than eight miles away from factories.

TABLE I. 10—*contd.*

For the season 1964-65 the basic minimum price of cane payable by sugar factories has been fixed at Rs. 5·36 per quintal delivered at the factory gate, linked to a recovery of 10.4 per cent or less. A premium of 4P. per quintal is payable for every 0·1 per cent rise in recovery above 10·4 per cent. The minimum price for sugarcane delivered at the cane purchasing centres connected by rail is 32 nP. per quintal less than the price fixed for delivery at the factory gate. Similarly a rebate at the rate of 2·5 P. per quintal per kilometer can be deducted from the cane price in the case of sugarcane delivered at the cane purchasing centres connected by road, if such cane is transported by the sugar factory at its cost. This rebate is also subject to a maximum of 32 P. per quintal.

*Source*: Directorate of Sugar and Vanaspati, Ministry of Food and Agriculture.

सत्यमेव जयते

## TABLE I. 11

## *Index Numbers of Production : Sugarcane, Sugar and Gur & Khandsari*
## 1957-58—1963-64

(Base: 1956-57=100)

| Year | Sugarcane | Sugar | Gur & Khandsari |
|---|---|---|---|
| (1) | (2) | (3) | (4) |
| 1957-58 . . . . . . . . | 101 | 97 | 104 |
| 1958-59 . . . . . . . . | 104 | 95 | 109 |
| 1959-60 . . . . . . . . | 110 | 120 | 108 |
| 1960-61 . . . . . . . . | 133 | 147 | 129 |
| 1961-62 . . . . . . . . | 125 | 132 | 124 |
| 1962-63 . . . . . . . . | 114 | 104 | 121 |
| 1963-64 . . . . . . . . | 127 | 125 | 129 |

### TABLE II.1

*Sugar : All-India Production and Share of States*—1950-51—1964-65
(*November—October*)

| Region/ States | 1950-51 | 1951-52 | 1952-53 | 1953-54 | 1954-55 | 1955-56 | 1956-57 | 1957-58 | 1958-59 | 1959-60 | 1960-61 | 1961-62 | 1962-63 | 1963-64 | 1964-65(P) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) |
| I. *All-India Production* (‘000 *tonnes*) . | 1,134 | 1,510 | 1,318 | 1,017 | 1,616 | 1,892 | 2,062 | 2,010 | 1,951 | 2,482 | 3,029 | 2,714 | 2,152 | 2,569 | 3,198 |
| *Percentage share of All-India Production* | | | | | | | | | | | | | | | |
| II. *Sub-Tropical Region* | 77·1 | 76·9 | 78·8 | 75·9 | 75·1 | 75·7 | 75·3 | 68·6 | 68·2 | 69·6 | 66·4 | 63·6 | 53·5 | 56·9 | 56·7 |
| Uttar Pradesh . | 53·3 | 56·2 | 53·9 | 55·8 | 56·7 | 53·1 | 53·2 | 46·5 | 46·2 | 49·6 | 47·1 | 44·3 | 39·5 | 43·1 | 39·1 |
| Bihar . | 20·1 | 14·9 | 21·2 | 14·5 | 14·2 | 17·2 | 15·4 | 13·9 | 16·1 | 13·3 | 12·7 | 13·2 | 7·9 | 9·3 | 12·2 |
| Punjab . | 1·9 | 3·3 | 2·4 | 2·7 | 1·7 | 2·1 | 2·9 | 4·1 | 3·6 | 4·1 | 4·0 | 3·4 | 2·9 | 2·6 | 3·1 |
| Madhya Pradesh. | 1·2† | 1·5† | 0·6† | 1·6† | 0·9† | 2·0 | 2·4 | 1·7 | 1·1 | 1.2 | 1·2 | 1·1 | 1.6 | 0·8 | 1·1 |
| Rajasthan | 0·1 | 0·5 | 0·1 | 0·5 | 0·8 | 0·7 | 0·9 | 0·7 | 0·4 | 0·5 | 0·6 | 0·6 | 0·7 | 0·3 | 0·3 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| West Bengal . | 0·3 | 0·5 | 0·6 | 0·5 | 0·6 | 0·5 | 0·4 | 0·3 | 0·4 | 0·4 | 0·5 | 0·6 | 0·5 | 0·4 | [illegible] |
| Orissa . | 0·2 | 0·2 | 0·1 | 0·3 | 0·2 | 0·2 | 0·1 | 0·2 | 0·2 | 0·1 | 0·1 | 0·2 | 0·2 | 0·2 | 0·3 |
| Assam . | .. | .. | .. | .. | .. | .. | .. | .. | 0·1 | 0·2 | 0·2 | 0·2 | 0·2 | 0·2 | 0·2 |
| *III. Tropical Region* . | 22·9 | 23·1 | 21·2 | 24·1 | 24·9 | 24·3 | 24·7 | 31·4 | 31·8 | 30·4 | 33·6 | 36·4 | 46·5 | 43·1 | 43·3 |
| Maharashtra* . | 10·9 | 10·7 | 10·7 | 12·7 | 11·0 | 10·5 | 11·8 | 16·2 | 16·5 | 16·5 | 17·6 | 18·3 | 24·8 | 21·2 | 19·4 |
| Andhra Pradesh . | 2·1 | 2·7 | 3·3 | 7·4 | 7·1 | 7·3 | 7·0 | 7·7 | 6·3 | 5·7 | 5·9 | 7·0 | 8·1 | 9·2 | 9·5 |
| Madras . | 8·2 | 6·6 | 6·0 | 2·7 | 3·5 | 2·9 | 3·2 | 3·5 | 3·9 | 3·5 | 4·1 | 4·5 | 4·8 | 5·6 | 6·2 |
| Mysore . | 1·4 | 2·7 | 0·8 | 1·1 | 3·0 | 3·1 | 2·1 | 3·8 | 4·4 | 3·7 | 4·1 | 4·6 | 6.0 | 4·5 | 5·8 |
| Gujarat | (*a*) | (*a*) | (*a*) | (*a*) | (*a*) | (*a*) | (*a*) | (*a*) | 0·3 | 0.4 | 0·9 | 1·3 | 1.7 | 1.5 | 1·3 |
| Kerala . | 0·3 | 0·3 | 0·3 | 0·2 | 0·3 | 2·9 | 0·6 | 0·4 | 0·5 | 0·6 | 0·3 | 0·4 | 0.7 | 0·4 | 0·6 |
| Pondicherry | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 0·6 | 0·4 | 0·4 | 0·6 | 0·5 |

(P) —Provisional.

* —Includes information for Gujarat upto 1957-58.

(*a*) —Included under Maharashtra.

‡ —Relates to erstwhile Madhya Bharat.

NOTE.— Based on information supplied by the Directorate of Sugar and Vanaspati, Ministry of Food and Agriculture.

### TABLE II.2

### *Sugar: Statewise Production,* 1960-61—1964-65

(November—October)

('000 tonnes)

| Region/State | 1960-61 | 1961-62 | 1962-63 | 1963-64 | 1964-65(P) |
|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) |
| *I. All-India* . . . . . | 3,029 | 2,714 | 2,152 | 2,569 | 3,198 |
| *II. Sub-Tropical Region* . | 2.013 | 1,726 | 1,150 | 1,463 | 1,811 |
| Uttar Pradesh . . . | 1,427 | 1,204 | 851 | 1,107 | 1,250 |
| Bihar . . . . | 385 | 359 | 170 | 239 | 391 |
| Punjab . . . . | 122 | 91 | 62 | 69 | 98 |
| Madhya Pradesh . . | 35 | 31 | 34 | 21 | 37 |
| Rajasthan . . . | 18 | 16 | 14 | 7 | 9 |
| West Bengal . . . | 16 | 16 | 11 | 10 | 12 |
| Orissa . . . . | 3 | 4 | 4 | 6 | 8 |
| Assam . . . . | 7 | 5 | 4 | 4 | 6 |
| *III. Tropical Region* . . | 1.016 | 988 | 1,002 | 1,106 | 1,387 |
| Maharashtra . . | 533 | 499 | 533 | 544 | 621 |
| Andhra Pradesh . . | 178 | 189 | 175 | 236 | 305 |
| Madras . . . . | 125 | 121 | 104 | 143 | 198 |
| Mysore . . . . | 123 | 125 | 130 | 117 | 185 |
| Gujarat . . . | 28 | 34 | 37 | 42 | 43 |
| Kerala . . . . | 10 | 10 | 13 | 9 | 19 |
| Pondicherry . . . | 19 | 10 | 10 | 15 | 16 |

सत्यमेव जयते

(P)—Provisional.

*Source:* Directorate of Sugar and Vanaspati, Ministry of Food and Agriculture.

## TABLE II.3

*Sugar: Percentage Recovery and Duration of Crushing*, 1959-60—1963-64

| Region/State | Percentage Recovery of Sugar | | | | | | Duration* of Crushing Season | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1959-60 | 1960-61 | 1961-62 | 1962-63 | 1963-64 | Average | 1959-60 | 1960-61 | 1961-62 | 1962-63 | 1963-64 | Average |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) |
| *I. All-India* . . . . . | 9·92 | 9·74 | 9·77 | 10·28 | 10·00 | 9·94 | 138 | 164 | 148 | 106 | 122 | 136 |
| *II. Sub-Tropical Region* | | | | | | | | | | | | |
| Uttar Pradesh . . . . . | 9·69 | 9·53 | 9·32 | 9·64 | 9·51 | 9·54 | 155 | 175 | 151 | 98 | 123 | 140 |
| Bihar . . . . . . | 9·43 | 9·22 | 9·12 | 9·71 | 10·02 | 9·50 | 130 | 156 | 148 | 68 | 88 | 118 |
| Punjab . . . . . . | 9·14 | 8·93 | 8·23 | 8·97 | 8·67 | 8·79 | 141 | 165 | 133 | 82 | 78 | 120 |
| Madhya Pradesh . . . . | 9·72 | 9·25 | 9·41 | 9·62 | 9·46 | 9·49 | 83 | 114 | 98 | 110 | 86 | 98 |
| Rajasthan . . . . . . | 8·71 | 9·19 | 9·30 | 9·46 | 8·30 | 8·99 | 101 | 132 | 106 | 91 | 52 | 96 |
| West Bengal . . . . . | 9·07 | 9·66 | 8·68 | 9·44 | 9·54 | 9·28 | 105 | 103 | 95 | 56 | 92 | 90 |
| Orissa . . . . . . | 9·27 | 9·12 | 8·18 | 8·81 | 8·26 | 8·73 | 89 | 91 | 143 | 113 | 76 | 102 |
| Assam . . . . . . | 7·34 | 7·89 | 8·60 | 9·69 | 9·17 | 8·54 | 80 | 104 | 83 | 50 | 64 | 76 |
| *III. Tropical Region* | | | | | | | | | | | | |
| Maharashtra . . . . . | 11·75 | 11·65 | 11·98 | 12·20 | 12·07 | 11·93 | 134 | 166 | 157 | 157 | 136 | 150 |
| Andhra Pradesh . . . . | 9·85 | 9·46 | 9·90 | 10·32 | 9·75 | 9·86 | 111 | 147 | 125 | 93 | 140 | 123 |

### TABLE II-3—*contd.*

| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Madras . . . . . . | 9·19 | 9·01 | 9·38 | 9·38 | 8·71 | 9·13 | 171 | 213 | 171 | 146 | 188 | 178 |
| Mysore . . . . . . | 10·65 | 10·12 | 10·55 | 11·16 | 10·86 | 10·67 | 118 | 173 | 173 | 135 | 140 | 148 |
| Gujarat . . . . . . | 10·71 | 10·75 | 10·91 | 10·45 | 10·89 | 10·74 | 61 | 142 | 161 | 154 | 152 | 134 |
| Kerala . . . . . . | 8·29 | 8·90 | 8·62 | 8·47 | 8·38 | 8·53 | 155 | 153 | 162 | 183 | 104 | 151 |
| Pondicherry . . . . . | .. | 7·19 | 8·99 | 8·66 | 7·75 | 8·15 | .. | 104 | 126 | 128 | 218 | 144 |

* —At 22 working hours a day.

*Source :* Directorate of Economics and Statistics, Ministry of Food and Agriculture.

## TABLE II.4

*Sugar: Stocks, Production, Consumption, Imports and Exports*
1950-51—1964-65

(Lakh tonnes)

| Sugar Year (1st November to 31st October) | Carry-over on 1st November | Production during the year | Imports | Total availability | Consumption | Exports |
|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| 1950-51 . . | 0·91 | 11·34 | 0·57 | 12·82 | 10·98 | .. |
| 1951-52 . . | 1·84 | 15·20 | .. | 17·04 | 11·82 | 0·08 |
| 1952-53 . . | 5·14 | 13·18 | 0·60 | 18·92 | 16·79 | 0·07 |
| 1953-54 . . | 2·06 | 10·30 | 7·29(*a*) | 19·65 | 18·36 | .. |
| 1954-55 . . | 1·29 | 16·22 | 5·74(*a*) | 23·25 | 17·51 | .. |
| 1955-56 . . | 5·74 | 18·90 | 0·69(*a*) | 25·33 | 19·72 | .. |
| 1956-57 . . | 5·61 | 20·74 | .. | 26·35 | 20·18 | 1·47 |
| 1957-58 . . | 4·70 | 20·09 | .. | 24·79 | 20·75 | 0·36 |
| 1958-59 . . | 3·68 | 19·51 | .. | 23·19 | 21·13 | 0·30 |
| 1959-60 . . | 1·76 | 24·82 | .. | 26·58 | 20·53 | .. |
| 1960-61 . . | 6·05 | 30·29 | .. | 36·34 | 21·27 | 2·47 |
| 1961-62 . . | 12·60 | 27·14 | .. | 39·74 | 25·87 | 3·61 |
| 1962-63 . . | 10·26 | 21·52 | .. | 31·78 | 24·88 | 5·14 |
| 1963-64 . . | 1·76 | 25·69 | .. | 27·45 | 23·36 | 2·50 |
| 1964-65 (Estimated) . | 1·59(*b*) | 32·00 | .. | 33·59 | 24·50 | 3·00 |

(*a*)—Includes refined sugar manufactured in India from imported raw sugar.

(*b*)—Includes stocks at ports.

*Source* : Directorate of Sugar and Vanaspati, Ministry of Food and Agriculture.

TABLE

*Sugar : Number of Working Joint*

| Region/State | Number of | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1950-51 | | | 1955-56 | | | 1960-61 | | |
| | (J) | (C) | (T) | (J) | (C) | (T) | (J) | (C) | (T) |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| *I. All-India* . . | 137 | 2 | 139 | 140 | 3 | 143 | 144 | 30 | 174 |
| *II. Sub-Tropical Region* | 109 | .. | 109 | 110 | .. | 110 | 110 | 6 | 116 |
| Uttar Pradesh . | 68 | .. | 68 | 68 | .. | 68 | 69 | 2 | 71 |
| Bihar . . | 29 | .. | 29 | 28 | .. | 28 | 28 | .. | 28 |
| Punjab . . | 3 | .. | 3 | 4 | .. | 4 | 3 | 3 | 6 |
| Madhya Pradesh . | 5 | .. | 5 | 5 | .. | 5 | 5 | .. | 5 |
| Rajasthan . . | 2 | .. | 2 | 3 | .. | 3 | 2 | .. | 2 |
| West Bengal . | 1 | .. | 1 | 1 | .. | 1 | 2 | .. | 2 |
| Orissa . . | 1 | .. | 1 | 1 | .. | 1 | 1 | .. | 1 |
| Assam . . | .. | .. | .. | .. | .. | .. | .. | 1 | 1 |
| *III. Tropical Region* . | 28 | 2 | 30 | 30 | 3 | 33 | 34 | 24 | 58 |
| Maharashtra . | 12 | 1 | 13 | 12 | 2 | 14 | 13 | 14 | 27 |
| Andhra Pradesh . | 7 | 1 | 8 | 8 | 1 | 9 | 9 | 2 | 11 |
| Madras . . | 4 | .. | 4 | 4 | .. | 4 | 5 | 3 | 8 |
| Mysore . . | 4 | .. | 4 | 4 | .. | 4 | 5 | 3 | 8 |
| Gujarat . . | .. | .. | .. | 1 | .. | 1 | .. | 2 | 2 |
| Kerala . . | 1 | .. | 1 | 1 | .. | 1 | 1 | .. | 1 |
| Pondicherry | .. | .. | .. | .. | .. | .. | 1 | .. | 1 |

J—Joint Stock and other factories.
C—Cooperative factories.
T—Total factories.

*Source :* Directorate of Sugar and Vanaspati, Ministry of Food and Agriculture.

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II.5

*Stock and Cooperative Sugar Factories*

| Sugar Factories | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1961-62 | | | 1962-63 | | | 1963-64 | | | 1964-65 | | |
| (J) | (C) | (T) | (J) | (C) | (T) | (J) | (C) | (T) | (J) | (C) | (T) |
| (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) | (19) | (20) | (21) | (22) |
| 146 | 34 | 130 | 145 | 41 | 186 | 145 | 48 | 194 | 148 | 50 | 198 |
| 110 | 7 | 117 | 110 | 8 | 118 | 109 | 10 | 119 | 110 | 10 | 120 |
| 69 | 3 | 72 | 69 | 3 | 72 | 69 | 3 | 72 | 69 | 3 | 72 |
| 28 | .. | 28 | 28 | .. | 28 | 28 | .. | 28 | 29 | | 29 |
| 3 | 3 | 6 | 3 | 4 | 7 | 3 | 5 | 8 | 3 | 5 | 8 |
| 5 | .. | 5 | 5 | .. | 5 | 4 | .. | 4 | 5 | | 5 |
| 2 | .. | 2 | 2 | .. | 2 | 2 | .. | 2 | 2 | .. | 2 |
| 2 | .. | 2 | 2 | .. | 2 | 2 | .. | 2 | 1 | .. | 1 |
| 1 | .. | 1 | 1 | .. | 1 | 1 | 1 | 2 | 1 | 1 | 2 |
| .. | 1 | 1 | .. | 1 | 1 | .. | 1 | 1 | .. | 1 | 1 |
| 36 | 27 | 63 | 35 | 33 | 68 | 37 | 38 | 75 | 38 | 40 | 78 |
| 13 | 14 | 27 | 12 | 17 | 29 | 13 | 20 | 33 | 12 | 20 | 32 |
| 10 | 4 | 14 | 10 | 7 | 17 | 11 | 7 | 18 | 11 | 8 | 19 |
| 6 | 3 | 9 | 6 | 3 | 9 | 6 | 4 | 10 | 8 | 4 | 12 |
| 5 | 3 | 8 | 5 | 3 | 8 | 5 | 3 | 8 | 5 | 3 | 8 |
| .. | 3 | 3 | .. | 3 | 3 | .. | 3 | 3 | .. | .. | 3 |
| 1 | .. | 1 | 1 | .. | 1 | 1 | 1 | 2 | 1 | 2 | 3 |
| 1 | .. | 1 | 1 | .. | 1 | 1 | .. | 1 | 1 | .. | 1 |

## TABLE II. 6

*Sugar : Index Numbers of Working Capacity—All-India and Important States*, 1951-52—1963-64

(Base : 1950-51=100)

| Region/State | 1951-52 | 1952-53 | 1953-54 | 1954-55 | 1955-56 | 1956-57 | 1957-58 | 1958-59 | 1959-60 | 1960-61 | 1961-62 | 1962-63 | 1963-64 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) |
| *I. All India* . . . | 100 | 98 | 99 | 100 | 107 | 113 | 122 | 131 | 136 | 143 | 147 | 157 | 167 |
| *II. Sub-Tropical Region* . | 99 | 97 | 98 | 99 | 103 | 108 | 110 | 114 | 117 | 120 | 122 | 125 | 132 |
| Uttar Pradesh . . | 100 | 100 | 98 | 102 | 104 | 108 | 110 | 116 | 116 | 121 | 123 | 125 | 132 |
| Bihar . . . . | 94 | 97 | 100 | 97 | 100 | 100 | 101 | 101 | 101 | 103 | 103 | 104 | 107 |
| Punjab . . . . | 100 | 100 | 100 | 51 | 100 | 189 | 167 | 167 | 229 | 229 | 229 | 263 | 290 |
| *III. Tropical Region* . . | 104 | 103 | 102 | 103 | 103 | 136 | 176 | 204 | 221 | 243 | 259 | 295 | 321 |
| Maharashtra . . . | 100 | 100 | 97 | 100 | 127 | 137 | 188 | 241 | 263 | 273 | 273 | 300 | 338 |
| Andhra Pradesh . . | 117 | 117 | 116 | 116 | 116 | 131 | 153 | 158 | 161 | 161 | 196 | 264 | 273 |
| Madras . . . . | 89 | 89 | 89 | 89 | 122 | 122 | 149 | 149 | 174 | 224 | 235 | 258 | 285 |
| Mysore . . . . | 108 | 101 | 101 | 101 | 116 | 146 | 215 | 215 | 246 | 294 | 294 | 294 | 294 |

NOTE.— Based on data supplied by the Directorate of Sugar and Vanaspati, Ministry of Food and Agriculture.

### TABLE II.7

### *Sugar: Statewise Installed Capacity of the Sugar Industry (in Terms of Annual Sugar Production)*

(Lakh tonnes)

| Region/State | 1950-51 | 1955-56 | 1960-61 | 1961-62 | 1962-63 | 1963-64 |
|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| *I. All-India* | 16·68 | 17·77 | 24·47 | 25·16 | 26·85 | 28·74 |
| *II. Sub-Tropical Region* | 13·05 | 13·39 | 15·63 | 15·84 | 16·24 | 17·19 |
| Uttar Pradesh | 8·55 | 8·80 | 10·23 | 10·37 | 10·57 | 11·18 |
| Bihar | 3·43 | 3·45 | 3·57 | 3·59 | 3·59 | 3·67 |
| Punjab | 0·45 | 0·46 | 1·04 | 1·04 | 1·19 | 1·30 |
| Madhya Pradesh | 0·36 | 0·36 | 0·36 | 0·41 | 0·41 | 0·41 |
| Rajasthan | 0·13 | 0·19 | 0·13 | 0·13 | 0·13 | 0·13 |
| West Bengal | 0·10 | 0·10 | 0·17 | 0·17 | 0·22 | 0·22 |
| Orissa | 0·03 | 0·03 | 0·03 | 0·03 | 0·03 | 0·18 |
| Assam | .. | .. | 0·10 | 0·10 | 0·10 | 0·10 |
| *III. Tropical Region* | 3·63 | 4·38 | 8·84 | 9·32 | 10·61 | 11·55 |
| Maharashtra | 1·63 | 2·06 | 4·44 | 4·44 | 4·92 | 5·50 |
| Andhra Pradesh | 1·03 | 1·03 | 1·44 | 1·75 | 2·37 | 2·45 |
| Madras | 0·50 | 0·68 | 1·25 | 1·25 | 1·44 | 1·60 |
| Mysore | 0·41 | 0·49 | 1·19 | 1·19 | 1·19 | 1·19 |
| Gujarat | .. | 0·06 | 0·28 | 0·45 | 0·45 | 0·45 |
| Kerala | 0·06 | 0·06 | 0·06 | 0·06 | 0·06 | 0·18 |
| Pondicherry | .. | .. | 0·18 | 0·18 | 0·18 | 0·18 |

*Source* : Directorate of Sugar and Vanaspati, Ministry of Food and Agriculture.

### TABLE 11.8

*Sugar : Exports by Destination*—1957—1964.

Quantity : '000 tonnes.
Value : Lakh rupees

| Destination | 1957 | | | 1958 | | | 1959 | | | 1960 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Quantity | Value | | Quantity | Value | | Quantity | Value | | Quantity | Value | |
| | | Total | Rs. per tonne | | Total | Rs. per tonne | | Total | Rs. per tonne | | Total | Rs. per tonne |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) |
| *I. Unrefined Sugar* . . . . | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| *II. Other Sorts* | | | | | | | | | | | | |
| U.S.A.. . . . . | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| China . . . . . | 32·4 | 259·3 | 800 | .. | .. | .. | 0·1 | 0·7 | 700 | .. | .. | .. |
| Kenya . . . . . | 21·4 | 168·5 | 787 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Singapore . . . . | 17·6 | 139·2 | 791 | 6·9 | 32·5 | 471 | 2·9 | 13·3 | 458 | 2·3 | 10·3 | 448 |
| Iraq . . . . . | 14·6 | 118·8 | 814 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Sudan . . . . . | 14·2 | 104·0 | 732 | 9·4 | 40·2 | 428 | .. | .. | .. | .. | .. | .. |
| Burma . . . . . | 11·7 | 86·7 | 741 | 3·0 | 13·6 | 453 | .. | .. | .. | .. | .. | .. |
| Ceylon. . . . . | 8·7 | 64·5 | 741 | 0·4 | 1·8 | 450 | .. | .. | .. | 3·4 | 12·2 | 359 |
| Aden . . . . . | 6·6 | 53·0 | 803 | 3·3 | 15·6 | 473 | 2·7 | 11·3 | 419 | 1·5 | 5·4 | 360 |
| Malaya . . . . . | 7·3 | 57·5 | 788 | 14·0 | 64·4 | 460 | 10·8 | 46·8 | 433 | 8·7 | 39·0 | 448 |
| Muscat . . . . . | 0·4 | 3·5 | 875 | 0·1 | 0·4 | 400 | 0·3 | 1·2 | 400 | 0·5 | 1·8 | 360 |
| Saudi Arab . . . . | 1·5 | 13·8 | 920 | .. | .. | .. | .. | .. | .. | 0·7 | 2·5 | 357 |
| Bahrein . . . . . | 2·3 | 21·4 | 930 | .. | .. | .. | .. | .. | .. | 0·2 | 0·8 | 400 |
| Others . . . . . | 11·1 | 85·5 | 770 | 2·9 | 3·9 | 134 | 0·7 | 2·6 | 371 | 0·4 | 1·8 | 450 |
| TOTAL . . . . | 149·8 | 1175·7 | 785 | 40·0 | 172·4 | 431 | 17·5 | 75·9 | 435 | 17·7 | 73·8 | 417 |

### TABLE 11.8—*contd.*

| Destination | 1961 | | | 1962 | | | 1963 | | | 1964 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Quantity | Value | | Quantity | Value | | Quantity | Value | | Quantity | Value | |
| | | Total | Rs. per tonne | | Total | Rs. per tonne | | Total | Rs. per tonne | | Total | Rs. per tonne |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) |
| *I. Unrefined Sugar* | | | | | | | | | | | | |
| U.S.A. | .. | .. | .. | .. | .. | .. | 66·5 | 355·2 | 534 | 89·5 | 816·0 | 912 |
| Canada | .. | .. | .. | .. | .. | .. | 16·9 | 69·3 | 410 | 0·3 | 1·2 | 400 |
| U.K. | .. | .. | .. | .. | .. | .. | 29·8 | 123·1 | 413 | 10·5 | 86·8 | 827 |
| Japan | .. | .. | .. | .. | .. | .. | 71·6 | 304·8 | 426 | 45·5 | 356·5 | 784 |
| Syria | .. | .. | .. | .. | .. | .. | 15·6 | 68·5 | 439 | .. | .. | .. |
| South Vietnam | .. | .. | .. | .. | .. | .. | 16·8 | 77·1 | 459 | 28·2 | 165·6 | 587 |
| Italy | .. | .. | .. | .. | .. | .. | .. | .. | .. | 21·1 | 141·7 | 672 |
| Hong Kong | .. | .. | .. | .. | .. | .. | .. | .. | .. | 10·5 | 65·7 | 626 |
| TOTAL | .. | .. | .. | .. | .. | .. | 217·2 | 998·0 | 459 | 205·6 | 1633·5 | 795 |

TABLE II.8—*contd.*

| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *II. Other Sorts.* | | | | | | | | | | | | |
| U.S.A. | 169·5 | 946·8 | 559 | 123·0 | 601·7 | 489 | 40·8 | 228·4 | 560 | 15·2 | 166·8 | 1097 |
| Kenya | 0·4 | 1·5 | 375 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Malaya | 75·4 | 325·8 | 432 | 45·2 | 176·3 | 390 | 66·3 | 570·8 | 861 | 19·5 | 171·4 | 879 |
| Singapore | 18·6 | 80·8 | 434 | 8·4 | 31·8 | 379 | 17·1 | 141·1 | 825 | 0·6 | 8·3 | 138 |
| Pakistan East | .. | .. | .. | 6·3 | 56·9 | 903 | .. | .. | .. | .. | .. | .. |
| Pakistan West | .. | .. | .. | 7·8 | 28·8 | 369 | 4·0 | 12·1 | 303 | .. | .. | .. |
| Aden | 8·8 | 31·2 | 354 | 5·7 | 17·1 | 300 | 4·7 | 14·7 | 313 | .. | .. | .. |
| Burma | 7·8 | 28·6 | 367 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Muscat | 1·8 | 7·0 | 389 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Saudi Arab | 0·7 | 2·7 | 386 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Bahrein | 2·6 | 9·4 | 362 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Hong Kong | .. | .. | .. | 13·0 | 40·3 | 310 | .. | .. | .. | .. | .. | .. |
| South Vietnam | .. | .. | .. | 5·0 | 14·6 | 292 | 16·5 | 53·5 | 324 | .. | .. | .. |
| Japan | .. | .. | .. | 0·5 | 1·8 | 360 | 32·8 | 138·8 | 423 | 24·5 | 178·6 | 729 |
| Nepal | .. | .. | .. | .. | .. | .. | .. | .. | .. | 3·5 | 40·3 | 115 |
| Canada | 10·2 | 36·4 | 357 | 124·0 | 448·6 | 362 | 71·5 | 302·5 | 423 | .. | .. | .. |
| Others | 3·0 | 12·1 | 403 | 19·2 | 55·6 | 290 | 29·7 | 150·6 | 507 | .. | .. | .. |
| TOTAL | 298·8 | 1482·3 | 512 | 358·1 | 1473·5 | 411 | 283·4 | 1612·5 | 569 | 63·3 | 565·4 | 893 |

*Source* : Monthly Statistics of the Foreign Trade of India, Department of Commercial Intelligence and Statistics, Calcutta.

## TABLE II.9

*Sugar : Exports—Break-down under Various Agreements and Sale to Free Markets*, 1962—1964

Quantity : '000 tonnes.
Value : Lakh rupees

| Destination | 1962 | | | 1963 | | | 1964 | | |
|---|---|---|---|---|---|---|---|---|---|
| | Quantity | Value | Rs. per tonne | Quantity | Value | Rs. per tonne | Quantity | Value | Rs. per tonne |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| *I. Unrefined Sugar* | | | | | | | | | |
| *U.S. Sugar Act* | | | | | | | | | |
| U.S.A. | .. | .. | .. | 66·5 | 355·2 | 534 | 89·5 | 816·0 | 912 |
| *Commonwealth Sugar Agreement* | | | | | | | | | |
| Canada | .. | .. | .. | 16·9 | 69·3 | 410 | 0·3 | 1·2 | 400 |
| U.K. | .. | .. | .. | 29·8 | 123·1 | 413 | 10·5 | 86·8 | 827 |
| *Free Market* | | | | | | | | | |
| Japan | .. | .. | .. | 71·6 | 304·8 | 426 | 45·5 | 356·5 | 784 |
| Syria | .. | .. | .. | 15·6 | 68·5 | 439 | .. | .. | .. |
| South Vietnam | .. | .. | .. | 16·8 | 77·1 | 459 | 28·2 | 165·6 | 587 |
| Italy | .. | .. | .. | .. | .. | .. | 21·1 | 141·7 | 672 |
| Hong Kong | .. | .. | .. | .. | .. | .. | 10·5 | 65·7 | 626 |
| TOTAL | .. | .. | .. | 217·2 | 998·0 | 459 | 205·6 | 1633·5 | 795 |

TABLE II.9—*contd.*

| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
|---|---|---|---|---|---|---|---|---|---|
| *Other Sorts* | | | | | | | | | |
| *U.S. Sugar Act* | | | | | | | | | |
| U.S.A. | 123·0 | 601·7 | 489 | 40·8 | 228·4 | 560 | 15·2 | 166·8 | 1097 |
| *Commonwealth Sugar Agreement* | | | | | | | | | |
| Canada | 124·0 | 448·6 | 362 | 71·5 | 302·5 | 423 | .. | .. | .. |
| Malaya | 45·2 | 176·3 | 390 | 66·3 | 570·8 | 861 | 19·5 | 171·4 | 879 |
| Singapore | 8·4 | 31·8 | 379 | 19·1 | 141·1 | 825 | 0·6 | 8·3 | 138 |
| Pakistan East | 6·3 | 56·9 | 903 | .. | .. | .. | .. | .. | .. |
| Pakistan West | 7·8 | 28·8 | 369 | 4·0 | 12·1 | 303 | .. | .. | .. |
| Aden | 5·7 | 17·1 | 300 | 4·7 | 14·7 | 313 | .. | .. | .. |
| *Free Market* | | | | | | | | | |
| Hongkong | 13·0 | 40·3 | 310 | .. | .. | .. | .. | .. | .. |
| South Vietnam | 5·0 | 14·6 | 292 | 16·5 | 53·5 | 324 | .. | .. | .. |
| Japan | 0·5 | 1·8 | 360 | 32·8 | 138·8 | 423 | 24·5 | 178·6 | 729 |
| Nepal | .. | .. | .. | .. | .. | .. | 3·5 | 40·3 | 115 |
| Others | 19·2 | 55·6 | 290 | 29·7 | 150·6 | 507 | .. | .. | .. |
| TOTAL | 358·1 | 1473·5 | 411 | 283·4 | 1612·5 | 569 | 63·3 | 565·4 | 893 |

*Source* : Monthly Statistics of the Foreign Trade of India, Department of Commercial Intelligence and Statistics, Calcutta.

## TABLE II.10

*Sugar : Amount of Subsidy given on Exports of Sugar*
1957-58—1965-66

| Year (1st April to 31st March) | Subsidy Paid (Rs. crores) |
|---|---|
| (1) | (2) |
| 1957-58 to 1960-61 | Nil |
| 1961-62 | 5·50 |
| 1962-63 | 14·20 |
| 1963-64 | 3·42 |
| 1964-65 | 2·10 |
| 1965-66 (Upto 20th September, 1965). | 9·24 |

*Source* : Directorate of Sugar and Vanaspati, Ministry of Food and Agriculture.

सत्यमेव जयते

### TABLE II.11

***Sugar* : *Rate of Excise Duty and Amount Collected,*** 1950-51—1963-64

| Period (April to March) | Rate of duty (Rs. per quintal) | Revenue from excise duty (Lakh Rs.) |
|---|---|---|
| (1) | (2) | (3) |
| 1950-51 | 7·37 | 656·10 |
| 1951-52 | 7·37 | 846·50 |
| 1952-53 : | | |
| Basic duty | 7·37 | 990·40 |
| Additional duty | 2·70 | .. |
| 1953-54 | 7·37 | 1,435·97 |
| 1954-55 | 7·37 | 810·38 |
| 1955-56 | 11·06 | 1,868·78 |
| 1956-57 | 11·06 | 2,080·22 |
| 1957-58 : | | |
| Basic duty | 11·06 (Upto 15-5-57)<br>22·15 (On and from 16-5-57) | 3,993·12 |
| Additional duty | 6·50 (On & from 14-12-57) | 332·77 |
| 1958-59 : | | |
| Basic duty | 22·15 | 4,745·66 |
| Additional duty | 6·50 | 1,289·28 |
| 1959-60 : | | |
| Basic duty | 22·15 | 4,803·74 |
| Additional duty | 6·50 | 1,114·91 |
| 1960-61 : | | |
| Basic duty | 22·15 (from 1-10-60) | 4,306·06** |
| Additional duty | 6·50 (from 1-10-60) | 1,111·04** |
| 1961-62 | | |
| Basic duty | 22·15 | 4,649.55** |
| Additional duty | 6·50 | 1,261·12** |

सत्यमेव जयते

TABLE II. 11—*contd.*

| (1) | (2) | (3) |
|---|---|---|
| 1962-63 : | | |
| Basic duty . . . . . | 22·15 | 6,002·42** |
| Additional duty . . . . | 6·50 | 1,523·07** |
| 1963-64 : | | |
| Basic duty . . . . . | 22·15 | 5,321·82** |
| Additional duty . . . . | 6·50 | 1,412·37** |

** Treasury deposit figures.

NOTES: 1. The above duty is leviable on sugar containing more than 90 per cent sucrose produced in a factory, ordinarily using power at the source of production but does not include khandsari, and palmyra sugar.

2. Additional excise duty was imposed under the Additional Duties of Excise (Goods of Special Importance) Act, 1957. This duty is in lieu of the sales tax levied by the Union and the State Governments and the net proceeds thereof except the net proceeds attributable to Union Territories are distributed to the States.

3. Reduced by Notification (Ministry of Finance) on sugar produced in a factory during the season 1959-60 (commencing 1st November) in excess of the average production of that factory in the two previous seasons ending 31 October 1960—Rs. 11·08 basic duty *plus* Rs. 6·50 additional duty per quintal. Similar concession for the produce of 1960-61 season at latter rates operative from 4th May, 1961.

4. Reduced rates by Notification (Ministry of Finance) also for sugar produced in (a) factories in the States of Andhra Pradesh, Madras, Maharashtra, Mysore and Kerala which in any previous year had started production between 1st July and 31st October (i) for sugar produced during 1st July, 1963 and 31st October, 1963 in excess of the quantity produced in corresponding period in 1962—Rs. 11·075 (Basic) and Rs. 6.50 (Addl.) per quintal (ii) sugar produced during 1st November, 1963 and 31st March, 1964 in excess of the quantity produced in corresponding period in 1961-62—Rs. 17·72 (Basic) and Rs. 6·50 (Addl.) per quintal, (b) factories in States other than those mentioned in (a) above which in any previous year had started production after 1st November (i) Sugar produced in November, 1963 in excess of production in November, 1961—Rs. 11·075 (Basic) and Rs. 6·50 (Addl.) per quintal (ii) Sugar produced during 1st December, 1963 and 31st March, 1964 in excess of the production in corresponding period in 1961-62—Rs. 17·72 (Basic) and Rs. 6·50 (Addl.) per quintal.

5. Under the Sugar Export Promotion Act, 1958 an additional duty was levied on sugar despatched from any factory for consumption in India, the quantity of which is equal to the quantity falling short of the export quota fixed for the factory at the rate of Rs. 45·55 per quintal with effect from 1st October, 1960.

6. Special excise duty at Rs. 2·52 per cwt. is levied on sugar removed from any factory on or after 24th/25th October, 1959 (midnight) the quantity of which is equal to the quantity of sugar lying in stock on 24th/25th October, 1959 (midnight) within the precincts of the factory under the Sugar (Special Excise Duty) Act, 1959.

*Source*: 1. Ministry of Finance (Central Board of Excise and Customs).

2. Statistics and Intelligence Branch (Central Excise).

### TABLE III.1

*Gur and Khandsari : Production and Share of Important States*, 1956-57—1963-64.

| State | 1956-57 | 1957-58 | 1958-59 | 1959-60 | 1960-61 | 1961-62 | 1962-63 | 1963-64 |
|---|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| *I. All-India Production* | | | | | | | | |
| (Lakh tonnes) | 52·03 | 54·21 | 56·71 | 56·21 | 66·87 | 64·32 | 63·09 | 67·32 |
| *Percentage Share to All-India Production* | | | | | | | | |
| *II. Sub-Tropical Region.* | | | | | | | | |
| Uttar Pradesh | 58·1 | 49·5 | 47·9 | 45·4 | 47·9 | 48·6 | 45·1 | 43·6 |
| Punjab . . | 8·4 | 10·0 | 10·3 | 11·9 | 11·8 | 10·4 | 10·6 | 10·4 |
| Bihar . . | 2·1 | 2·0 | 3·6 | 4·1 | 2·8 | 2·3 | 3·9 | 3·1 |
| Madhya Pradesh . . | 1·9 | 1·3 | 1·0 | 1·2 | 1·2 | 1·4 | 1·4 | 1·3 |
| Assam . | 1·4 | 1·4 | 1.5 | 1·2 | 1.1 | 1·5 | 1·3 | 1·3 |
| TOTAL | 71·9 | 64·2 | 64·3 | 63·8 | 64·8 | 64·2 | 62·3 | 59·7 |
| *III. Tropical Region* | | | | | | | | |
| Maharashtra | 5·9 | 10·0 | 10·1 | 9·5 | 10·1 | 9·3 | 9·1 | 8.8 |
| Andhra Pradesh . . | 8·8 | 8·8 | 9·5 | 8·5 | 7·0 | 8·1 | 8·9 | 11·2 |
| Mysore . | 4·7 | 4·9 | 4·6 | 5·7 | 5·3 | 6·1 | 6·7 | 7·3 |
| Madras . | 5·1 | 6·3 | 5·6 | 5·6 | 6·8 | 6·8 | 7·0 | 6·4 |
| TOTAL | 24·5 | 30·0 | 29·8 | 29·3 | 29·2 | 30·3 | 31·7 | 33·7 |
| Others* . | 3·6 | 5·8 | 5·9 | 6·9 | 6·0 | 5·5 | 6·0 | 6·6 |

*Include Orissa, Rajasthan, West Bengal, Delhi, Tripura, Himachal Pradesh and Jammu & Kashmir in the Sub-Tropical Region and Gujarat and Kerala in the Tropical Region.

NOTES.—1. The figures of gur production (including Khandsari) from 1956-57 to 1962-63 have been calculated after taking into account the figures of sugarcane production adjusted on the basis of all-India index numbers of sugarcane (in terms of gur) production taking 1961-62 (fully revised) as base and after making allowance for the utilisation of cane for white sugar and for seed, feed, chewing and juice making purposes. Figures for 1963-64 are based on the partially revised estimates. So far as the utilisation of sugarcane for seed, feed, etc. purposes is concerned, figures obtained as a result of the new Survey conducted by the Directorate of Marketing and Inspection (for the period 1956-57 to 1960-61) have been used.

2. Based on data supplied by the Directorate of Economics and Statistics, Ministry of Food and Agriculture.

## TABLE III.2

### *Gur and Khandsari : Cost of Production in Uttar Pradesh*

| Particulars<br>(1) | Gur (Power unit)<br>(2) | Khandsari (Power unit)<br>(3) |
|---|---|---|
| *Basic Data* | | |
| (*i*) Crushing capacity per day per unit | 15 tonnes | 15 tonnes |
| (*ii*) Average number of days per season | 100 days | 100 days |
| (*iii*) Crushing capacity per season | 1,500 tonnes | 1,500 tonnes |
| (*iv*) Average recovery on cane | 10 per cent | 4·75 per cent |
| (*v*) Total production per season | 150 tonnes | 71·25 tonnes |
| | Rs. | Rs. |
| *Investment* | | |
| (*i*) Equipment | 15,000·00 | 22,600·00 |
| (*ii*) Structures | 8,000·00 | 12,000·00 |
| (*iii*) Working Capital | 10,000·00 | 10,000·00 |
| Total Capital Investment | 33,000·00 | 44,600·00 |
| *Working Expenses* | | |
| (*i*) Wages | 7,000·00 | 9,200·00 |
| (*ii*) Other recurring expenses | 5,100·00 | 5,500·00 |
| (*iii*) Depreciation, interest and taxes | 4,010·00 | 5,782·00 |
| (*iv*) Taxes and fees | 500·00 | 14,595·00 |
| | | (Less cost of 78·75 (tonnes of molassin gur @ Rs. 30 per quintal) Rs. 23,625·00 |
| 1. Total expenditure on processing | 16,610·00 | 11,452·00 |
| 2. Cost of processing per quintal | 11·07 | 16·07 |
| 3. Cost of cane equivalent to 1 quintal of product (10 quintals of cane required for one quintal of gur and cost of 21 quintals of cane required for one quintal of khandsari @ Rs. 5·30 per quintal) | 53·00 | 111·30 |
| 4. Cost of production per quintal at the field | 64·07 | 127·37 |

*Source* : Khadi and Village Industries Commission.

सत्यमेव जयते

## TABLE III.3

*Molasses : Production—All-India and Share of Important States,* 1959-60—1963-64

(November—October)

| Region/State | 1959-60 | 1960-61 | 1961-62 | 1962-63 | 1963-64 |
|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) |
| *I. All-India Production* ('000 tonnes) | 946 | 1,211 | 1,087 | 749 | 964 |
| *Percentage Share to All-India Total* | | | | | |
| *II. Sub-Tropical Region* | 72·3 | 64·6 | 65·9 | 55·8 | 56·7 |
| Uttar Pradesh . . . | 50·7 | 43·5 | 44·9 | 40·7 | 42·7 |
| Bihar . . . . . | 14·6 | 14·0 | 14·0 | 8·0 | 8·9 |
| Punjab . . . . . | 4·3 | 4·2 | 4·0 | 3·1 | 2·8 |
| Madhya Pradesh . . | 1·2 | 1·3 | 1·3 | 2·0 | 1·0 |
| Rajasthan . . . | 0·7 | 0·8 | 0·6 | 0·8 | 0·3 |
| West Bengal . . . | 0·4 | 0·6 | 0·5 | 0·6 | 0·4 |
| Orissa . . . . . | 0·1 | Neg. | 0·3 | 0·3 | 0·4 |
| Assam . . . . . | 0·3 | 0·4 | 0·3 | 0·3 | 0·2 |
| *III. Tropical Region* . . | 27·7 | 35·2 | 34·1 | 44·2 | 43·3 |
| Maharashtra . . . | 13·3 | 15·0 | 14·8 | 20·0 | 16·7 |
| Andhra Pradesh . . | 5·9 | 7·3 | 7·5 | 9·1 | 10·8 |
| Madras . . . . | 4·3 | 7·7 | 5·2 | 6·5 | 8·4 |
| Mysore . . . . | 3·3 | 3·2 | 4·8 | 5·2 | 4·4 |
| Gujarat . . . | 0·4 | 0·8 | 1·1 | 1·9 | 1·6 |
| Kerala . . . . | 0·5 | 0·3 | 0·4 | 0·8 | 0·4 |
| Pondicherry . . . | .. | 0·9 | 0·3 | 0·7 | 1·0 |

Neg.—Negligible.

*Source :* Directorate of Economics and Statistics, Ministry of Food and Agriculture.

## TABLE III.4

### *List of Distilleries*

| State | Sl. No. | Name & Address of Distillery |
|---|---|---|
| Uttar Pradesh | 1 | M/s. Ajudhia Distillery, P.O. Raja-ka-Sahaspur, Moradabad. |
| | 2 | M/s. Alco Chem. Ltd., (Seohara Distillery), Seohara, Bijnor. |
| | 3 | M/s. Captainganj Distillery Ltd., P.O. Captainganj, Deoria. |
| | 4 | M/s. Carew & Co. Ltd., Rosa, Shahjehanpur. |
| | 5 | M/s. Central Distillery and Chemical Works Ltd., Meerut Cantt. |
| | 6 | M/s. Cooperative Co. Ltd., (Distillers), Saharanpur. |
| | 7 | M/s. Daurala Sugar Works (Distillery), Daurala. |
| | 8 | M/s. Dyer Meakin Breweries Ltd., (Luchnow Distillery), P.B. No. 6, Dollygunj, Lucknow. |
| | 9 | M/s. Dyer Meakin Breweries Ltd., Mohan Nagar Brewery & Allied Industries, Mohan Nagar, Gaziabad. |
| | 10 | M/s. Kesar Sugar Works Ltd., (Distillery) P.O. Baherj, Bareilly. |
| | 11 | M/s. Hindustan Sugar Mills Ltd. (Distillery) Golagokarannath, Kheri. |
| | 12 | M/s. Modi Distillery, Modinagar, U.P. |
| | 13 | M/s. Narang Industries Ltd., P.O. Sugar Factory, Nawabganj, Gonda. |
| | 14 | M/s. Oudh Sugar Mills (Hargaon Distillery) Hargaon, Sitapur. |
| | 15 | M/s. Pilkhani Distillery & Chemical Works Ltd., Pilkhani, Saharanpur. |
| | 16 | M/s. Rampur Distillery & Chemical Co. Ltd., Rehe-Raza, Rampur. |
| | 17 | M/s. Saraya Distillery, P.O. Sardarnagar, Gorakhpur. |
| | 18 | M/s. Shamli Distillery & Chemical Works Ltd., Shamli, (S.S. Rly.), Muzaffarngar. |
| | 19 | M/s. Simbhaoli Distillery Ltd., P.O. Simbhaoli, Meerut. |
| | 20 | M/s. Sir Shadilal Distillery & Chemical Works, Mansurpur, Muzaffarnagar. |
| | 21 | M/s. Standard Refinery & Distillery Ltd., P.O. Unnao. |
| Bihar | 22 | M/s. Behar Sugar Works (Distillery), Pachrukhi, Saran. |

## TABLE III.4—*contd.*

| State | Sl. No. | Name & Address of Distillery |
|---|---|---|
| Bihar—*contd.* | 23 | M/s. Cawnpore Sugar Works Ltd., (Marhowrah Distillery), Marhowrah. |
| | 24 | M/s. New Swadeshi Distillery, Narkatiaganj, , Champaran. |
| | 25 | M/s. Ranchi Distillery, P.O. Box. No. 72, Ranchi. |
| | 26 | M/s. S.K.G. Distillery, Hathua, P.O. Mirganj, Saran. |
| Madhya Pradesh | 27 | M/s. Central India Chemcials Ltd., Sehore, (Bhopal). |
| | 28 | M/s. Cox. Distillery, Nowgong. |
| | 29 | M/s. Govt. Alcohol Factory, Ratlam. |
| Punjab | 30 | M/s. Jagatjit Distillery, P.O. Jagatjitnagar, P.O. Hamirah, Kapurthala. |
| | 31 | M/s. Karnal Distillery Co., Ltd., Karnal. |
| | 32 | M/s. Punjab Distillery Industries Ltd., P.O. Khasa, Amritsar. |
| | 33 | M/s. Modi Synthetic Fibres Corporation Industrial Area, Yamunanagar. |
| Rajasthan | 34 | M/s. Rajasthan Govt. Distillery, Sriganganagar. |
| | 35 | M/s. Udaipur Distillery Co. (P) Ltd., Udaisagar Road, Udaipur. |
| West Bengal | 36 | M/s. Carew & Co. Ltd., Narsamuda, Asansol. |
| | 37 | M/s. Eastern Distilleries (P) Ltd., (Russa Distillery) Tollygunge, Calcutta. |
| | 38 | M/s. Shaw Wallace & Co., Ltd., Bhadrakali, Hooghly. |
| Andhra Pradesh | 39 | M/s. Anakapalli Coop. Agricultural & Industrial Society Ltd., No. W-41, Thummapala Anakapalli, Visakhapatnam. |
| | 40 | M/s. Andhra Sugars Ltd., Tanaku. |
| | 41 | M/s. Deccan Sugar & Abkhari Co. Ltd. Samalkot, East Godavari. |
| | 42 | M/s. Govt. Power Alcohol Factory, Shakarnagar, Nizamabad. |
| | 43 | M/s. Govt. Distilllery, Narayanguda. |
| | 44 | M/s. K.C.P. (Distillery) Ltd., Vuyyuru, Krishna. |
| | 45 | M/s. Sarvarya Sugars Ltd., Chelluru, East Godavari. |
| | 46 | M/s. Shri Ram Sugars & Industries Ltd., Bobbili (Srikakulam Distt.) |
| Gujarat | 47 | M/s. Alembic Chemical Works Ltd. (Distillery), Baroda—3. |

TABLE III. 4—*concld.*

| State | Sl. No. | Name & address of Distillery |
|---|---|---|
| Kerala | 48 | M/s. Mc. Dowell & Co. Ltd., Shertally P.O. Alleppey. |
| | 49 | M/s. Polson Distillery, P.B. No. 6, Chalakudi. |
| | 50 | M/s. Travancore Sugars & Chemical Ltd., Tiruvalla. |
| Maharashtra | 51 | M/s. Brihan Maharashtra Sugar Syndicate Ltd., P.O. Shreepur, Sholapur. |
| | 52 | M/s. Govt. Distillery Chitale, Ahmednagar. |
| | 53 | M/s. Kolhapur Sugar Works (Distillery) Kasba Bavada; P.O. New Palace, Kolhapur. |
| | 54 | M/s. Maharashtra Sugar Mills Ltd., Tilaknagar (Distillery) Ahmednagar. |
| | 55 | M/s. Polychem Ltd., *Nira* (Distillery), Poona. |
| | 56 | M/s. Sangli Sahakari Distillery, Sangli. |
| | 57 | M/s. Somaiya Organe Chemicals Ltd. (Sakarwadi Distillery) Ahmednagar. |
| | 58 | M/s. Walchandnagar Distillery Ltd. Walchandnagar, Poona. |
| Madras | 59 | M/s. East India Distilleries & Sugar Factories Ltd, Nellikuppam. |
| Mysore | 60 | M/s. Indian Sugar & Refineries Ltd., Chitadigi Road, Hospet, Bellary. |
| | 61 | M/s. Mysore Sugar Co., Ltd., Mandya. |
| | 62 | M/s. Ugar Sugar Works Ltd., P.O. Ugar-Khurd, Belgaum. |

## TABLE IV·1

*Collections of Cane Cess/Purchase Tax and Expenditure on Sugarcane Development*
1961-62—1962-63

| State | Year | Rate of cane cess/purchase tax—adjusted to Rs./tonne. | Amount of cane cess/ purchase tax collected (Rs.) | Amount spent on sugarcane development (Rs.) | Percentage of (5) to (4) |
|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) |
| I. *Sub-Tropical Region* | | | | | |
| Uttar Pradesh . | 1961-62 | 5·09 | 3,48,99,000 | 1,02,94,000 | 29·5 |
| | 1962-63 | 5·09 | 6,59,72,000 | 1,07,49,518 | 16·3 |
| Bihar . . | 1961-62 | 5·09 | 1,06,33,328 | 44,55,116 | 41·9 |
| | 1962-63 | 5·09 | .. | .. | .. |
| Punjab . . | 1961-62 | 2·41 | 47,69,497 | 1,74,922 | 3.7 |
| | 1962-63 | 2·41 | 26,33,980 | 3,02,321 | 11·5 |
| Madhya Pradesh . | 1961-62 | 3·20 | 50,945 | 1,44,557 | 236·7 |
| | 1962-63 | 3·20 | 2,02,984 | 2,38,970 | 117·7 |
| II. *Tropical Region* | | | | | |
| Maharashtra . | 1961-62 | 5·00 | 1,46,85,358 | 47,78,253 | 32·5 |
| | 1962-63 | 5·00 | 1,58,86,826 | .. | .. |
| Andhra Pradesh . | 1961-62 | 5·08 till 4-1-61 and 5·00 thereafter | 71,19,479 | 19,37,802 | 27·2 |
| | 1962-63 | 5·00 | 1,30,18,176 | 36,35,005 | 27·5 |
| Madras . . | 1961-62 | 2·00 upto 31-7-62 and 5·00 thereafter | 16,41,296 | 3,84,936 | 23·5 |
| | 1962-63 | 5·00 | 20,92,874 | 5,44,086 | 26·0 |
| Mysore . . | 1961-62 | 6·00 upto 30-9-61 and 15% of the price of cane thereafter | 24,28,189 | 1,02,500 | 4·2 |
| | 1962-63 | 15% | | | |

*Source* : Indian Central Sugarcane Committee, Ministry of Food and Agriculture.

सत्यमेव जयते

## TABLE IV·2

*Details of Loans by Industrial Finance Corporation to Sugar Industry*
1948-49—1963-64

(Lakh Rs.)

| Year | Amount of Loan Sanctioned: Public Limited Companies: No. of units | Amount of Loan Sanctioned: Public Limited Companies: Amount | Amount of Loan Sanctioned: Co-operative Societies: No. of units | Amount of Loan Sanctioned: Co-operative Societies: Amount | Amount Disbursed: Public Limited Companies | Amount Disbursed: Co-operative Societies | Amont Repaid: Public Limited Companies | Amont Repaid: Co-operative Societies |
|---|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| 1948-49 | .. | .. | .. | .. | .. | .. | | |
| 1949-50 | .. | .. | 1 | 20·00 | .. | .. | .. | |
| 1950-51 | .. | .. | .. | .. | .. | 20·00 | .. | |
| 1951-52 | 2 | 32·00 | .. | .. | .. | .. | .. | |
| 1952-53 | | | | .. | 17·18 | .. | 0·11 | |
| 1953-54 | 3 | 70·00 | .. | .. | 34·82 | .. | 8·74 | 6·00 |
| 1954-55 | 2 | 79·00 | 2 | 98·00 | 72·00 | .. | 8·15 | |
| 1955-56 | 5 | 161·50 | 13 | 545·00 | 49·00 | 40·00 | 11·00 | 2·00 |
| 1956-57 | 1 | 49·00 | 6 | 376·50 | 117·80 | 335·63 | 5·30 | 12·00 |
| 1957-58 | 1 | 45·00 | 4 | 250·00 | 85·50 | 307·00 | 14·30 | 3·00 |
| 1958-59 | | | 1 | 143·75 | 42·80 | 303·62 | 58·93 | 31·59 |
| 1959-60 | 1 | 80·00 | 5 | 410·00 | 16·00 | 450·00 | 44·36 | 44·63 |
| 1960-61 | | | 5 | 426·00 | | 281·75 | 32·81 | 84·20 |
| 1961-62 | 1 | 32·00 | 8 | 710·00 | 22·00 | 202·75 | 20·59 | 106·96 |
| 1962-63 | .. | 20·00 | 5 | 570·00 | | 363·50 | 23.82 | 148·96 |
| 1963-64 | .. | .. | 1 | 110·00 | | 315·00 | 18·10 | 206·83 |
| | 16 | 568·50 | 51 | 3659·25 | 456·50 | 2574·25 | 246·21 | 646·17 |

*Source* : Industrial Finance Corporation.

### TABLE IV·3

*Sugar (Cane & Beet) : World Production and Exports*

| Country | Production (raw value—'000 tonnes) | | | Exports ('000 tonnes) | | |
|---|---|---|---|---|---|---|
| | 1961-62 | 1962-63 | 1963-64 | 1961 | 1962 | 1963 |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| **Hawaii** . . . | 1,016 | 999 | 1,069 | .. | .. | |
| **United Arab Republic** . . . | 324 | 359 | 375 | 74 | 64 | 14 |
| **British Guiana** . | 331 | 322 | 263 | 318 | 315 | |
| **Indonesia** . . | 643 | 592 | 652 | .. | 33 | |
| **Puerto Rico** . . | 915 | 897 | 899 | .. | .. | |
| **Mauritius** . . | 553 | 533 | 686 | 506 | 515 | 574 |
| **Australia** . . | 404 | 1,880 | 1,751 | 949 | 1,062 | 1,442 |
| **United States** . | 2,959 | 3,119 | 3,882 | 6 | 3 | 4 |
| **Philippines** . . | 1,468 | 1,555 | 1,684 | 1,116 | 966 | 1,084 |
| **India** . . . | 2,938 | 2,348 | 2,776 | 321 | 390 | 510 |
| **Fiji Islands** . . | 404 | 1,880 | 1,751 | 811 | 858 | 1,166 |
| **Brazil** . . . | 3,620 | 3,304 | 3,333 | 783 | 445 | 524 |
| **Cuba** . . . | 4,815 | 3,821 | 3,500 | 6,414 | 5,131 | 3,521 |
| **Pakistan** . . | 208 | 291 | 265 | | ... | . |
| **Others** . . | 31,292 | 28,670 | 31,494 | 9,097 | 8,723 | 21,353 |
| TOTAL . | 51,890 | 50,570 | 54,380 | 20,395 | 18,505 | 30,192 |

*Source :* F.A.O. Production Year Book, 1964 and F.A.O. Trade Year Book, 1964.

TABLE IV.5

*Sugarcane : Prices in Selected Producing Countries*, 1959—1963

| Country | 1959 |  | 1960 |  | 1961 |  | 1962 |  | 1963 |  |
|---|---|---|---|---|---|---|---|---|---|---|
|  | U.S. Cents per kg. | Rs. per quintal | U.S. Cents per kg. | Rs. per quintal | U.S. Cents per kg. | Rs. per quintal | U.S. Cents per kg. | Rs. per quintal | U.S. Cents per kg. | Rs. per quintal |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) |
| **Puerto Rico** . . . | 0·99 | 4·71 | 0·99 | 4·71 | 1·03 | 4·90 | 1·19 | 5·67 | 1·07(P) | 5·10 |
| **Mauritius** . . . . | 1·19 | 5·67 | 1·04 | 4·95 | 1·03 | 4·90 | 0·72 | 3·43 | 0·99 | 4·71 |
| **Australia** . . . . | 1·07 | 5·10 | 1·18 | 5·62 | 1·11 | 5·29 | 1·11 | 5·29 | 1·34 | 6·38 |
| **United States** . . . | 0·91 | 4·33 | 0·94 | 4·48 | 0·98 | 4·67 | 1·05 | 5·00 | 1·26 | 6·00 |
| **India** . . . . | 0·91 | 4·33 | 0·91 | 4·33 | 0·91 | 4·33 | 0·91 | 4·33 | 0·98 | 4·67 |

P—Provisional.

*Source* : F.A.O. Production Year Book, 1964.

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### TABLE IV·4

*Sugar (Cane and Beet) : Share of Selected Exporting Countries in World Trade,* 1959—1963

Quantity (raw basis—'000 tonnes)

| Country | 1959 | 1960 | 1961 | 1962 | 1963 |
|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | ( |
| United Arab Republic . . . | 7<br>(—) | 52<br>(0·3) | 74<br>(0·4) | 64<br>(0·3) | 14<br>(—) |
| British Guiana . | 259<br>(1·7) | 314<br>(1·8) | 318<br>(1·6) | 315<br>(1·77) | |
| Indonesia . . | 40<br>(0·3) | 37<br>(0·2) | | 33<br>(0·2) | |
| Mauritius . . | 512<br>(3·4) | 299<br>(1·7) | [illegible]<br>(2·5) | 515<br>(2·8) | 574<br>(1·9) |
| Australia . . | 816<br>(5·5) | 714<br>(4·1) | 811<br>(4·0) | 858<br>4·6) | 1,166<br>(3·9) |
| United States . | 6<br>(—) | 4<br>(—) | 6<br>(—) | 3<br>(—) | 4<br>(—) |
| Philippines . . | 965<br>(6·5) | 1,120<br>(6·4) | 1,116<br>(5·5) | 966<br>(5·2) | 1,084<br>(3·6) |
| India . . . | 19<br>(0·1) | 19<br>(0·1)) | 321<br>(1·6) | 391<br>(2· | 510<br>(1·7) |
| Fiji Islands . . | 816<br>(5·5) | 221<br>(1·3) | 138<br>(0·7) | 204<br>(1·1) | 276<br>(0·9) |
| Brazil . . . | 616<br>(4·2) | 769<br>(4·4) | 783<br>(3·8) | 445<br>(2·4) | 524<br>(1·7) |
| Cuba . . . | 4,952<br>(33·4) | 5,635<br>(32·5) | 6,414<br>(31·3) | 5,131<br>27·8) | 3,521<br>(11·7) |
| Pakistan . . | .. | 3<br>(—) | | .. | |
| Others . . . | 5,835<br>(39·4) | 8,216<br>(47·2) | 9,908<br>(48·6) | 9,581<br>(51·8) | 22,519<br>(74·6) |
| TOTAL . | 14,843 | 17,403 | 20,395 | 18,505 | 30,192 |

NOTE.—Figures in brackets indicate the percentage share.
*Source :* F.A.O. Trade Year Book, 1964.